EVOLUTION OF THE MARKET FOR AIR-TRAVEL INFORMATION

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Abstract

The Internet has enabled consumers to act as their own travel agents and to independently verify the accuracy of the information provided by airlines through the CRSs and travel agents. As a result, the relationships between consumers and the suppliers of air-travel information have been radically altered, and we document these changes. We identify the relevant market for air-travel information, which includes CRSs, online travel agencies, and the websites and call centers of individual carriers. We determine market concentration and market shares using the Herfindhal-Hirschman Index. Based on our analysis, we argue that there is no longer any need to regulate independent CRSs. However, airlines that own CRSs continue to have an incentive to withdraw their flight and fare information from rival CRSs and, to prevent this from happening, the mandatory participation rule adopted in 1992 should be maintained.

Keywords: Market Power, Market Definition, Computer Reservation Systems, Airlines

JEL Classifications: D4, K2, L51, L93

I. INTRODUCTION

The Department of Transportation's ("Department") Notice of Proposed Rulemaking ("NPRM")[1] proposes extensive regulation of both independent and integrated computer reservation systems ("CRSs" or "systems"). The fundamental economic issue raised in the NPRM is whether there is a competitive problem in the supply of information regarding air travel to passengers. This paper provides an analysis of this issue.

The relevant market for an antitrust analysis is the market for air-travel information. The sources for air-travel information include CRS providers and their travel agency subscribers, consolidators, content aggregators such as FareChase.com, and the websites and call centers of individual airlines. In addition, online travel agencies – Orbitz in particular – are increasingly bypassing CRSs by going directly to air carriers' internal reservation systems, thereby becoming independent sources of air-travel information. The share of total bookings made via CRS systems in the market for air-travel information has declined considerably since the early 1980s, such that CRSs handle only about one-half of total bookings. This fact is strong evidence that the relevant market for air-travel information is not limited to CRS providers, but includes online travel agencies, and the websites and call centers of individual carriers. Any analysis of the competitive constraints faced by CRSs must take all of these competitors into account.

The air-travel information market is only moderately concentrated, according to criteria in the U.S. Department of Justice and Federal Trade Commission's "Horizontal

[1] Notice of Proposed Rule Making, *Computer Reservations System (CRS) Regulations*, 67 Fed. Reg. 69366 (D.O.T. Nov. 15, 2002) (hereinafter "NPRM").

Merger Guidelines," with an Herfindahl-Hirschman Index ("HHI") of approximately 1,200. In that market, Sabre's share is approximately 24.6 percent, which does not represent a predominant market share.

Historically, the air-travel information market was believed to suffer from a market failure, in that consumers lacked independent methods with which to verify the accuracy of information provided by airlines via their CRSs and by travel agents. The effect of this market failure was that consumers paid higher airfares, other factors being the same. Since the Department's last rulemaking in 1992, the Internet has radically altered the market for air-travel information. Most fundamentally, the Internet has provided a mechanism for consumers and travel agents to verify the accuracy of information provided by different CRS providers and travel agents. Airlines cannot bias the CRSs in a manner undetectable by travel agents, and travel agents' failure to correct that bias, or their own bias, can be detected and disciplined by passengers. This enhanced ability of a majority of consumers independently to verify air-travel information calls into question whether any economic basis exists to regulate independent CRSs.

The emergence of independent CRSs also alters the market for air-travel information, by removing incentives to bias information and by forcing independent CRSs to compete on the merits for subscribers. This serves to make accurate information more available to consumers. We conclude that, at least in the case of independent CRSs, no economic justification exists for regulation barring preferential screen displays, preventing differences in booking fees, or regulating contracts between CRSs and travel agents, because the market effectively disciplines such conduct in ways that prevent harm

to consumers. This conclusion is supported by an analysis of the terms and conditions negotiated in current contracts and by the data on carrier-direct bookings by travel agents.

The emergence of the Internet as an independent source of information about air travel, the increasing use of that channel by airlines bypassing travel agents and CRSs, and the increasing significance of independent CRSs all show that no individual, independent CRS has meaningful market power that should be cause for regulatory concern. This conclusion is demonstrated by understanding that this market is an information market and that relevant information is available from multiple competing providers, many of who are not CRSs. Furthermore, the market for air-travel information is not highly concentrated.

Airlines that own CRSs are likely to act on their incentive to withdraw from or downgrade in rival, non-airline owned CRSs, reducing the quality and quantity of air-travel information, and causing consumers and travel agents to switch to the airline-owned CRSs. Such withdrawals would have a devastating effect on the competitiveness of rival, non-airline owned CRSs, and would thereby reduce airline competition. Airlines also have an incentive to reduce the quality of information held by consumers as a means of reducing the price competitiveness of the market for air transportation.

Airlines that own CRSs would especially benefit by withdrawing from or downgrading their participation in other CRSs, because the owner airlines benefit from both the relative advantage created for their own CRS and the reduction in price competition engendered by poorer information. Such withdrawal would be harmful to consumers because it would balkanize information markets, create higher search costs, and act as an entry barrier to emerging airlines that may be less able to inform consumers

of their presence. The Department's current mandatory participation rule has, to date, prevented this outcome from occurring. For this reason, the rule should not be eliminated as long as a significant CRS is controlled by one or more major carriers.

The paper is organized as follows. Section II provides background information on the supply of air-travel information. Section III gives an overview of the CRS rules. Market definition is discussed in Section IV and market power is discussed in Section V. An economic analysis of the NPRM is presented in Section VI.

II. BACKGROUND ON THE CURRENT SUPPLIERS OF AIR TRAVEL AND AIR-TRAVEL INFORMATION

In this section, we provide an overview of current suppliers of air travel and air-travel information. The objective of this section is to provide context for our economic evaluation of the proposed regulations.

A. Airlines

We first consider the markets for air travel between pairs of cities. U.S. air carriers generated $80.9 billion in passenger revenue in 2001, while enplaning 622 million revenue passengers.[2] Table One identifies the largest carriers serving city-pair markets in the United States, based on number of enplanements, for the twelve-month period ending June 2002.[3] On a national basis, the four largest airlines (i.e., American Airlines, Delta Airlines, United Airlines, and Southwest Airlines) account for approximately 60 percent of all enplanements. US Airways, Northwest Airlines, and

[2] Air Transportation Association, *2002 Annual Report*.

[3] Enplanements represent the number of passengers boarding planes.

Continental Airlines have enplanement shares comparable to each other and, combined, account for an additional 26 percent of total enplanements nationwide. America West and other smaller airlines account for the remaining 14 percent of total enplanements nationwide.

Most major airlines now have one or more hubs at which many of their long-distance passengers change planes. This approach has allowed carriers to fill a larger portion of the seats on their planes and to increase the flight frequency of nonstop routes between their hubs and other airports. For travelers whose origin or destination is the hub city, there is often very limited choice among airlines. This situation is documented in Table Two, which reports the enplanement shares of the three largest carriers for twelve hub cities.[4] In ten of the cities, a single carrier dominates the hub. The exceptions are Los Angeles and Chicago, which are shared by American Airlines and United Airlines. Using the Herfindahl-Hirschman Index ("HHI"), airport concentration in these locations ranges from 4,000 to 6,000; that measure can be interpreted to indicate that 1.7 to 2.5 equal-sized carriers serve these airports.[5] Empirical studies on airline fares have shown that the hub carrier is able to exercise market power: fares in hub city-pair markets are significantly higher than in non-hub city-pair markets.[6]

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[4] An airline's enplanement share at an airport includes all passengers changing planes at that airport and not just originating passengers.

[5] The HHI is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of three firms with shares of 20 percent, 30 percent, and 40 percent, the HHI is equal to 2,900 (i.e., $20^2 + 30^2 + 40^2$). The HHI takes into account the relative size and distribution of firms in the market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between firms increases. An HHI of 10,000, which results from squaring a single share of 100 percent, thus represents a monopoly.

[6] *See* Severin Borenstein, "Hubs and High Fares: Dominance and Market Power in the U.S. Airline Industry," *RAND Journal of Economics* (Autumn 1989); Severin Borenstein, "The Dominant-Firm

In any city-pair market, each airline present in the market offers a number of daily flights and a variety of full-fare and discount tickets. As a generalization, business travelers are less price sensitive than are leisure travelers. Airlines exploit this fact by charging higher fares for tickets with characteristics valued more highly by business travelers than by leisure travelers. Business travelers, for example, often book flights without advance notice, value flexible itineraries, travel during weekdays, and value their time highly. On the other hand, leisure travelers tend to plan their travel well in advance and maintain their travel plans. As a consequence, airlines charge higher fares depending upon features such as (1) purchase without advance notice, (2) lack of travel restrictions (e.g., a Saturday night stay), and (3) whether the ticket is fully refundable or exchangeable. Airline price discrimination has led to a plethora of fares.[7]

To illustrate the wide variety of air travel choices that confront consumers in city-pair markets generally, we selected two city-pair markets, New York (JFK)-Los Angeles and Austin-San Jose, and examined the number of flights and nonrefundable, nonexchangeable fares available for a weekend trip (booked with three-weeks and with two-days advance notice). The results of our inquiry are reported in Table Three. As the

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Advantage in Multiproduct Industries: Evidence from the U.S. Airlines," *Quarterly Journal of Economics* (Nov. 1991).

[7] The multiplicity of airline fares and ticket restrictions is well recognized in the literature of marketing and economics. For example, a 1994 study on U.S. airline competition found "considerable dispersion in airline prices" and observed that that "variation in fares is substantial." Indeed, the study discovered that, for direct coach class travel in the largest direct service U.S. domestic markets, the "expected difference in prices paid by two passengers selected at random on a route is about 36 percent of the airline's mean ticket price on the route." The authors of this study concluded, moreover, that airline "price dispersion cannot easily be explained by cost differences alone." Severin Borenstein and Nancy L. Rose, "Competition and Price Dispersion in the U.S. Airline Industry, *Journal of Political Economy*, Vol. 102, pp. 653-683, at 653-655 (Aug. 1994). Case studies prepared by the Harvard Business School have similarly documented the prevalence of price discrimination among airlines. *See*, *e.g.*, Steven C. Michael and Alvin J. Silk, Harvard Business School, Document No. 9-594-001, "American Airlines' Value Pricing (A)" (May 11, 1994); Steven C. Michael and Alvin J. Silk, Harvard Business School, Document No. 9-594-019, "American Airlines' Value Pricing (B)" (May 11, 1994).

portion of the table associated with the three-week advanced booking shows, we identified (on March 12, 2003) available flights departing each origin city on the morning of Friday, March 28, 2003, and returning on Sunday, March 30, 2003. In the New York-Los Angeles market, six airlines offered a total of 21 flights and 12 fares, with the fares ranging from $300 to $621. In the Austin-San Jose market, four airlines offered a total of 15 flights and 6 fares, with the fares ranging from $301 to $321. (We note that additional fares are also available without weekend-stay, advance purchase, and nonrefundable, nonexchangeable restrictions.) As the second portion of Table Three shows, the number of flight and fare options increases significantly when one takes into account differences in the amount of advance notice given.

Table Three makes the following important point: *there is a market for information for air travel*. That is, even if travelers know when they want to leave and return, they are unlikely to know which flights are available and at what prices. Therefore, there is an opportunity for entrepreneurs to solve travelers' information problems by collecting and disseminating information, which suppliers and consumers demand and for which they are willing to pay. A similar situation arises between buyers and sellers in housing markets, between employers and employees in labor markets, and between retailers and consumers in many retail markets, such as those for groceries, office products, and automobiles. In each of these markets, the buyers' lack of information about the suppliers' products and prices creates a market for that information, which is supplied by "information suppliers." Real estate agents provide listings of houses for sale and their "asking" prices; Internet agencies like Monster.com provide resumes to prospective employers; and the Sunday newspaper provides retail

price information to consumers. Some information suppliers charge the seller or the buyer, or both, for providing information; others charge the seller, the buyer, or both only when a sale is completed.

In many markets for information, a producer of information (which is often also a seller of the underlying good, such as the home, automobile or mortgage) provides information directly to buyers, bypassing or partially bypassing independent information suppliers. Some homeowners seeking to sell their home, for example, might bypass real estate agents and seek to sell their home themselves (or offer their home themselves as well as through a broker). The same is true of airline information: Airlines may offer the information directly to passengers (e.g., on their own web sites), through independent information suppliers (e.g., travel agents using CRSs), or both.

B. Computer Reservation Systems

The first airline reservation system was launched in 1964 when American Airlines created the Sabre (Semi-Automated Business Research Environment) system, which allowed real-time access to flight inventory in all its offices.[8] Prior to Sabre, inventory was managed through centralized reservation systems consisting of groups of operators in a room with physical cards that represented inventory (i.e., seats on planes). Other carriers soon followed with their own internal Airline Reservation Systems.[9] The CRS concept emerged when the various ARSs were connected to form a multi-airline reservations network that was available to all travel agents.

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[8] *See*, *e.g.*, Harrell Associates, *The Internet Travel Industry: What Consumers Should Expect and Need to Know, and Options for a Better Marketplace* (June 6, 2002), at 11.

[9] *See* Fahy Decl., App. 3, pp. 2-3.

Today, there are four established providers of CRS services: Sabre, Galileo, Worldspan, and Amadeus. Modern CRS technology consists of four principal, functional components: (1) inventory management and display; (2) pricing and fare search engines; (3) ticket and document generation; and (4) database reporting. In addition to being the primary means by which traditional brick and mortar travel agencies obtain flight and fare data, CRSs serve as hosts for the internal reservation systems of some airlines and are the source of real-time flight and fare data for some online travel agencies. For example, Travelocity uses the Sabre system, while Expedia and Orbitz both use Worldspan. Orbitz has announced plans to connect directly with airlines, bypassing Worldspan, and has signed agreements to direct connect with ten carriers, including American, America West, Continental, Delta, Northwest, United, and US Airways, which collectively account for approximately 68 percent of U.S. enplanements. At present, Orbitz has implemented such direct connections for American, Continental and Northwest.

At the time the CRS rules were first adopted, all CRS systems were owned by airlines. However, airline owners to an increasing degree have divested their ownership interests in CRSs. As noted above, American Airlines originally owned Sabre, the largest system in terms of bookings. American sold 20 percent of its ownership interest in Sabre in 1996, and sold its remaining interest in Sabre in March 2000.[10]

The Apollo CRS of United Airlines became Galileo in 1987, when ten major North American and European airlines joined with United. In 1997, Galileo became a public company, with its airline owners selling at that time 37 percent of the company in

[10] "10-K for 2001," Sabre Holding Corporation (Dec. 31, 2001) at 2.

an initial public offering.[11] An additional 37 percent of the company was sold in a second public offering, conducted in 1999.[12] At that time, United Airlines became the sole airline to own stock in Galileo, with a 26 percent ownership stake. In October 2001, Cendant Corporation (which is not affiliated with any airlines) purchased the entire company.

Worldspan was formed in 1990 through the combination of CRSs owned by TWA and Delta, and today it is entirely owned by three airlines. Delta, Northwest, and American own 40 percent, 34 percent, and 26 percent of Worldspan, respectively.[13] American obtained its ownership share in Worldspan in 2001 when it purchased TransWorld Airlines ("TWA"). Worldspan recently announced an agreement by which all airline ownership interests would be sold to private equity firms.[14] The transaction, scheduled to be completed in mid-2003, is subject to financing, government, and regulatory approvals.[15]

Three of the founding airline owners of Amadeus – Air France, Iberia, and Lufthansa – currently hold about 60 percent of the company. The ownership interest of each of the airlines is as follows: Air France (23.4 percent), Iberia (18.4 percent), and Lufthansa (18.3 percent).[16] The public owns the remainder. Continental had acquired a

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[11] "10-K for 1997," Galileo International, Inc. (Dec. 31, 1997) at 10.

[12] "10-K for 1999," Galileo International, Inc. (Dec. 31, 1999) at 47.

[13] Worldspan, "Company Profile," http://www.worldspan.com/home.asp?fPageID=5 (2001).

[14] "Worldspan to be Acquired by Private Equity Firms," Press Releases, at http://www.worldspan.com/home.asp?fPageID=51&fNewsID=762&fNewsLangID=1&fCurrCountry=382 (Mar. 4, 2003)

[15] "Worldspan to be Acquired by Private Equity Firms," Press Releases, at http://www.worldspan.com/home.asp?fPageID=51&fNewsID=762&fNewsLangID=1&fCurrCountry=382 (Mar. 4, 2003).

[16] Amadeus Global Travel Distribution, SA, *Annual Report* (Dec. 31, 2001), at 151.

13 percent ownership interest in Amadeus in 1995 as the result of the merger between Amadeus and System One, but that interest was sold in 1997.[17]

Sabre and Amadeus report the largest number of travel agencies using their CRSs worldwide.[18] Over 60,000 travel agencies use each system worldwide. Galileo and Worldspan also report serving tens of thousands of travel agencies worldwide.[19] Table Four presents the bookings of each CRS provider as a percentage of total bookings made in the U.S. As shown in the table, in 1983, CRSs' combined share accounted for approximately 88 percent of total bookings; this combined share declined to just under 53 percent by 2002. Sabre's share of total bookings equaled approximately 24.6 percent in 2002. Table Four shows the shares of Worldspan, Galileo, and Amadeus over the period 1983 to 2002.

Table Five reports CRS providers' booking shares for total bookings made in the U.S. through CRSs, i.e., excluding all bookings that did not use a CRS. As shown in the table, Sabre's share of CRS bookings equaled approximately 45.5 percent in 2002. Table Five reports the 2002 shares for Worldspan, Galileo, and Amadeus. While Sabre's share declined slightly from 1983 to 2002, Worldspan's share almost doubled, with much of its share gain occurring between 1998 and 2002. Galileo's share declined in the period 1983 to 2002, while Amadeus' share first increased, peaked in the 1990s, and has since declined.

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[17] *See*, *Global Distribution Systems – Outlook for the 21st Century* (2000) at 137.

[18] *See* Amadeus, "Facts: The Amadeus Central System," http://www.amadeus.com/en/50/5020.jsp (accessed Mar. 12, 2003); Sabre, "Overview," http://www.sabre.com/about/overview/index.html (accessed Mar. 12, 2003).

[19] *See* Galileo, "About Galileo," http://www.galileo.com/about/ (2003); Worldspan, "Company Profile," http://www.worldspan.com/home.asp?fPageID=5 (2001).

C. Travel Agencies

Travel agencies provide their customers with flight and fare information, make reservations, sell tickets, and provide other ancillary services. The number of brick and mortar travel agencies in the U.S. peaked in 1994, at approximately 24,000.[20] During the past decade, a number of factors have affected the financial performance of these travel agencies. First, the Internet has had an impact on how consumers obtain travel information and purchase tickets. Second, airlines have eliminated base commissions paid to travel agencies and are attempting to bypass travel agents and CRSs.[21] As a result, since 1995, the number of brick and mortar travel agencies has declined. By year-end 2001, the number had declined by 25 percent, from 24,000 to approximately 18,000.[22]

The largest brick and mortar travel agencies in the U.S. in terms of volume (e.g., American Express, Navigant, and Carlson Wagonlit) focus primarily on corporate travel. In addition to providing flight and fare information and booking tickets, they assist large organizations in a variety of ways, including the development of travel policies and

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[20] National Commission to Ensure Consumer Information and Choice in the Airline Industry, *Upheaval in Travel Distribution: Impacts on Consumers and Travel Agents* (Nov. 13, 2002), at 2; *see* Wilson Dec., App. 2, p. 6.

[21] *See*, *e.g.*, NPRM at 69403; United Airlines press release, "United Announces Change in Travel Agents Commission Policy" (July 15, 2002); Northwest Airlines press release, "Northwest Changes Its Travel Agent Commission Structure" (Mar. 19, 2002); American Airlines press release, "American Airlines Announces Change in Travel Agent Commission" (Mar. 18, 2002); Chris Isidore, "Delta Ends Agent Payments," CNNMoney, http://money.cnn.com/2002/03/15/news/companies/delta (Mar. 15, 2002); Transportation Group International, "Travel Agents Access to Airline Fares," (July 30, 2001), at 20. *See also* JetBlue Airways, "Travel Agency Log-In" website (2003) ("Effective . . . April 25, 2002, JetBlue Airways will no longer pay travel agent commissions."); *see* Wilson Dec., App. 2, p. 6.

[22] American Society of Travel Agents, "Tips for Travelers," http://www.astanet.com/travel/whyuse.asp (Mar. 12, 2003).

supplier agreements, summarizing employee travel information, and providing customized reports. Medium-sized agencies often provide services to both large corporations and small businesses, while smaller agencies tend to focus on leisure travelers.

Online travel agents have achieved significant market presence since the CRS rules were last revised in 1992.[23] These agencies are suppliers between the consumer of travel and the supplier, but they conduct business over the Internet, rather than in person or over the phone. Each online agency subscribes to one of the CRSs and provides the consumer with the same information and choices that a brick and mortar travel agency (subscribing to the same CRS) is able to provide. While most online travel agent sites have a leisure-travel focus, some are frequently used by small businesses, and some have an exclusive business travel focus. Generally, these sites offer complete trip researching and purchase capabilities, including air, hotel, and car rental. Increasingly, they sell more complex or nontraditional travel products like cruises, vacation packages, bed & breakfast stays, rental condominiums, and adventure travel. As shown in Table Six, the three largest online agencies, as measured by airline bookings, are Travelocity, Expedia, and Orbitz.

Travelocity is owned by Sabre, and its source for information regarding flight and fare data is the Sabre CRS. The Travelocity site allows the traveler to enter her travel plans and Travelocity shows available flight options ordered by time or price, based on the user's preference. Travelocity permits the traveler to search for low fares by using

[23] *See generally* Harrell Associates, *The Internet Travel Industry: What Consumers Should Expect and Need to Know, and Options for a Better Marketplace* (June 6, 2002); Andrew Lee, Center for Asian Business Cases, *Computer Reservation Systems: An Industry of Its Own* (Jan. 1, 2000).

alternative airports and dates, and it allows a reservation to be "held" for 24 hours where the carrier has not forbidden such a service. The website also promotes special travel and "last minute" deals.

Expedia was founded by Microsoft and is currently owned by USA Networks. Worldspan is the primary source of flight and fare information for Expedia, although Expedia has also signed separate agreements with airlines and other suppliers. Expedia offers many of the same features as Travelocity, but does not offer the "reservation hold" option. Expedia has recently acquired a large, commercially oriented travel agency to expand its presence in the corporate travel market.

Orbitz is owned by five major airlines (i.e., American, United, Northwest, Delta, and Continental) and has 37 airline associates that participate on its site.[24] Orbitz uses Worldspan for flight and fare data. Orbitz has also developed direct connections with suppliers as a means of eliminating the need for a CRS, and ten carriers have entered into direct connect arrangements.[25] (As noted above, at least two such direct connections, with American and Northwest, have been implemented.) Combined, these ten carriers accounted for more than 77 percent of all U.S. enplanements in 2002. The Orbitz website allows the user the option of selecting airports within 100 miles of origin and destination as a means of finding lower fares. Orbitz uses software from ITA Associates to find and display fare information, which is the first item shown on its response screen. Passengers view prices, ranked from lowest to highest, and the number of stops on each displayed

[24] *See* "About Orbitz," (March 12, 2003), at http://www.orbitz.com. Together, the 42 airline partners are called 'charter associates.' Charter associates are required to provide Orbitz with any of their fares posted on their own or third-party websites. They are also required to provide Orbitz with marketing support, including advertising and publicity, in relation to their sales on the site. This support may take the form of exclusive web fares.

[25] *See* "CO Cuts Distribution Costs With New Orbitz Direct Link," *Aviation Daily* (Jan. 8, 2003), at 4.

flight. The passenger then has the option of selecting a non-stop, one-stop, or multi-stop connection and may view price and schedule options for each selection. Orbitz shows fares for all major scheduled carriers except Southwest. JetBlue fares are shown on Orbitz, but the booking must be made directly with the carrier.

Each of the above online travel agencies operates as a brokerage service. They are compensated in part through commissions and promotional fees paid by travel suppliers. In some cases, they have negotiated arrangements with suppliers that allow them also to earn profit margins on air/car/hotel "package" offerings. All three major online agencies charge consumers a processing or service fee for making a reservation.

Table Seven provides information regarding the share of Sabre's total bookings contributed by the largest travel agencies using their CRS (excluding Travelocity). As shown in the table, the top ten travel agencies account for approximately 32 percent of Sabre's total booking. The top 100 travel agencies account for approximately one-half of Sabre's total bookings.

D. Summary

Over the last 25 years, the information suppliers in airline markets have traditionally been brick and mortar travel agencies that most often obtained their information through computer reservation systems.[26] As discussed above, however, other information suppliers have recently emerged to change this landscape. Since the CRS rules were last revised, the rapid development of the Internet has brought with it a proliferation of sources of air-travel information – namely, the various online travel

[26] Before the advent of CRSs, and to some extent even after, travel agents obtained information from Official Airlines Guides, , IATA fare manuals, and from the individual airlines, directly by telephone.

agencies and the websites of the carriers themselves. The participants in the market for air-travel information continue to include such traditional sources as the four CRS operators, brick and mortar travel agencies, and the call centers of individual airlines. Joining them today, however, are web-based travel agencies like Travelocity and Expedia, which provide information directly to consumers via the Internet. In addition, every major airline, and almost every minor airline, operates a website providing schedule, fare, and ticketing information, and these have provided a means other than the telephone by which consumers can book directly with the carriers. Most recently, other sources are emerging online that seek to pool the information available through the websites of individual carriers; these new content aggregators, such as SideStep, serve consumers without relying upon a CRS.

Each of these new sources presents an alternative to the existing computer reservation systems, and each thus has the potential to discourage a CRS from increasing booking fees or from reducing the supply or quality of available information regarding air travel. An analysis of the competition faced by CRSs should therefore consider whether and to what extent the presence of these other information providers constrains the ability of a CRS to engage in anticompetitive behavior. In the sections to follow, we present an economic analysis of the current and future ability of CRS providers to charge supracompetitive prices or reduce the supply of available information, and we assess what, if any, effects the Department's proposed CRS rules will likely have in this environment.

III. OVERVIEW OF HISTORICAL AND PROPOSED CRS RULES

In this section, we briefly describe the CRS rules as originally adopted in 1984, as revised in 1992, and the rules proposed in the current NPRM.

A. 1984 CRS Rules

The Civil Aeronautic Board's ("CAB") 1984 CRS Rules were designed to prevent "competitive abuses and consumer injury resulting from practices of those airlines that provide computer reservation services to air carriers and travel agents."[27] The CAB was concerned about the actions of airlines that were vertically integrated into the CRS business because,

> [since] they are competitors in the downstream air transportation industry, they have the ability and incentive to exercise that power in ways that may interfere with air transport competition.[28]

The 1984 CRS rules regulated airline-owned CRSs. The most significant regulations imposed at this time were those that (1) prohibited display bias; (2) banned discriminatory booking fees charged to non-affiliated airlines; and (3) placed restrictions on contracts between CRSs and travel agencies ("subscriber contracts").

Display bias. Airline-owned CRSs were prohibited from using any factors directly or indirectly related to airline identity when ordering information (including information regarding connecting flights) provided to travel agencies. In addition, the criteria used to order the information displayed were required to be consistent across airlines and markets. Further, airline-owned CRSs had to make available, upon request, the criteria used to order the information provided to travel agencies.[29]

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[27] Civil Aeronautics Board, *Carrier-Owned Computer Reservations Systems*, 49 Fed. Reg. 32540 (Aug. 15, 1984) (hereinafter "1984 CRS Rules").

[28] 1984 CRS Rules, Challenges to Our Basis and Purpose, I.A.

[29] *See* 1984 CRS Rules, § 255.4.

Discriminatory booking fees. Airline-owned CRSs were banned from discriminating among airlines with regard to fees charged for participation in the CRS. In addition, participation in the CRS could not be conditioned upon the purchase or sale of any other goods or services. Further, an airline-owned CRS had to make available, upon request, information regarding the current fee levels as well as fee arrangements with other airlines.[30]

Subscriber contracts. Airline-owned CRSs were banned from entering into contracts with travel agencies that exceeded five years in length. In addition, airline-owned CRSs could not directly or indirectly prohibit travel agencies from using another CRS. Further, airlines owning a CRS could not condition any commission payments to travel agencies (from the sale of tickets) on the agent's choice of CRS. Nor could an airline-owned CRS condition prices charged to travel agencies for use of the system on the identity of the airlines whose tickets were sold by the travel agency.

B. 1992 CRS Rules

In 1992, the DOT modified and readopted the CRS Rules "because of the need to prevent the vendors from using their control of the systems to substantially reduce airline competition and to deny travel agents (and thus the traveling public) complete, accurate, and impartial information on airline services."[31] The most significant modifications in the 1992 CRS Rules were (1) the introduction of mandatory participation by airlines that own CRSs in rival CRSs and (2) additional restrictions on subscriber contracts.

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[30] *See* 1984 CRS Rules, § 255.5.

[31] Final Rule and Denial of American Airlines Petition for Rulemaking, Computer Reservations System (CRS) Regulations, 57 Fed. Reg. 43780, at "Summary of Decision" (Dept. Of Transp. Sept. 22, 1992) (hereinafter "1992 CRS Rules").

Mandatory participation. Under the 1992 rules, airlines that own CRSs must participate in other CRSs as long as the other CRSs charge commercially reasonable booking fees. Booking fees are considered commercially reasonable if (1) they do not exceed the booking fees charged by the airline-owned CRS itself or (2) they do not exceed the fees paid by the airline-owner of the CRS to another CRS.[32]

Subscriber contracts. Additional restrictions placed on subscriber contracts in 1992 prohibit CRSs from (1) offering contracts longer than five years, and no longer than three years unless a contract for three years or less is offered simultaneously; (2) offering automatic contract extensions whether due to the addition/deletion of equipment or any other event; (3) requiring travel agencies to achieve a minimum volume of bookings for, or lease a minimum amount of equipment from, the CRS; and (4) restricting the use of third-party computer hardware or software in conjunction with CRS services, except as necessary to maintain CRS integrity.[33]

C. NPRM Proposed CRS Rules

The NPRM proposes numerous changes to the 1992 CRS rules. The most significant of these proposals would (1) expand the rules to cover independent CRSs; (2) eliminate mandatory participation by airlines that own CRSs in other CRSs; (3) eliminate the ban on discriminatory booking fees charged by CRSs to airlines; (4) impose additional restrictions on subscriber and airline contracts; and (5) impose restrictions on price advertising by airlines, CRSs, and travel agencies.

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[32] *See* 1992 CRS Rules, § 255.7.

[33] *See* 1992 CRS Rules, § 255.8.

Expanded coverage. The 1992 CRS rules apply only to airline-owned CRSs. The NPRM proposes to expand coverage of the rules to all CRSs.[34]

Additional restrictions on subscriber and airline contracts. The NPRM proposes to place additional restrictions on subscriber contracts. Specifically, CRSs are to be barred from agreeing with travel agent subscribers to contracts that would (1) require travel agencies to pay for shortfalls in bookings upon early termination of contracts, or (2) offer prices for CRS services depending on usage levels (i.e., productivity pricing).[35] The NPRM would also limit the ability of CRSs to require that participating carriers provide their users all their fares.

Restrictions on price advertising. The NPRM proposes that service fees charged by airlines, CRSs, or travel agencies must be listed separately from the price of air transportation until a specific itinerary is displayed (at which point the full fare must be displayed). In addition, service fees are to be considered unfair and deceptive if they (1) exceed the greater of $20 or ten percent of the fare, (2) are *ad valorem*, and (3) are not prominently displayed near the advertised fare.[36]

Elimination of mandatory participation and discriminatory booking fees. The NPRM proposes to eliminate the requirement (introduced in the 1992 CRS rules) whereby all airlines that own CRSs must participate in other CRSs.[37] The NPRM also

[34] *See* NPRM at 69425.

[35] *See* NPRM at 69427.

[36] *See* NPRM at 69428.

[37] *See* NPRM at 69421-422.

proposes to eliminate the ban on discriminatory booking fees charged by CRSs to airlines.[38]

IV. MARKET DEFINITION

In this section we define the relevant antitrust market within which we conduct our analysis of the market power issues raised in the NPRM. We begin by discussing the market definitions implicitly defined in the NPRM, and then provide what we believe is the correct definition of the relevant antitrust market in this case. As discussed above, the product provided by CRSs and their competitors is information about air transportation – flights, fares, and availability.

A. An Analysis of the NPRM's Implicit Market Definition

The rationale for the proposals contained in the NPRM is that the CRSs have too much market power in their negotiations with airlines over booking fees. The NPRM expresses its concerns as follows:

> [T]he systems appear to have market power against airlines, because travel agencies sell seventy percent of all airline tickets, travel agents rely on a system for booking ninety percent of their domestic tickets and eighty percent of their international tickets, and because most travel agency offices use one system for all or almost all of their bookings.
>
> Since relatively few travel agency offices make extensive use of more than one system, most airlines have had to participate in every system in order to make their services readily saleable by the travel agents using each system. No airline can afford to lose access to a significant number of distribution outlets, as explained elsewhere in this notice. As a result, competition and market forces have not disciplined the price or quality of services offered by airline participants. The systems accordingly have

[38] *See* NPRM at 69422.

> established booking fees for airlines that exceed their costs of providing CRS services to the airlines.[39]

Although the NPRM never defines a relevant antitrust market, this quotation suggests that the firms competing in the relevant antitrust market are limited to the four CRSs. Alternatively, the NPRM refers to CRSs as essential facilities, which necessarily is a claim that each CRS system constitutes a separate antitrust market for air-travel information. In any event, for the reasons expressed below, we do not believe that either of these two suggested markets constitutes a relevant antitrust market within which to analyze the pertinent market power issues.

The underlying assumptions in the NPRM are that consumers purchase tickets primarily from brick and mortar travel agents (and that they are unlikely to switch among channels), and that each agency is locked into a single CRS. Moreover, the quotation assumes that passengers are locked into a single travel agent, and will not substitute travel agents if their travel agent provides poor information (i.e., poor service), whether because the agent receives poor information from its CRS or otherwise. As a result, the NPRM asserts CRSs are essential facilities, based on the notion that airlines have to be on every CRS or else lose access to a significant number of travel agents and, through them, to a large number of consumers. Furthermore, entry into the market for air-travel information is assumed to be difficult. Apparently based on these beliefs, the assertion is made in the NPRM that CRSs have substantial market power in establishing booking fees to airlines, which in turn increases air fares to consumers.

The NPRM generally takes the position that CRSs have substantial market power over airlines. For example, the goal in regulating subscriber contracts, as expressed in

[39] *See* NPRM at 69419.

the NPRM, is to provide brick and mortar travel agent subscribers more bargaining power by permitting them to switch more easily (i.e., at low cost) between competing CRSs or to use multiple CRSs. The NPRM posits that such regulation will reduce switching costs among subscribers, thereby providing the airlines with more bargaining power. Similarly, the goal stated in the NPRM in eliminating the requirements for mandatory participation and non-discriminatory booking fees for airline-owned CRSs is to provide the airlines more bargaining power in their relationships with independent CRSs.

When travel agents and consumers have alternative means to obtain flight and fare data, the relevant antitrust market cannot be limited to CRSs. We believe, therefore, that the view of the market for air-travel information set forth in the NPRM is fundamentally flawed. We present an alternative view that recognizes that the emergence of independent CRSs and the Internet provides the market with leading competitors that lack the incentives to distort information, as had been observed in a market dominated by vertically integrated information suppliers. The Internet has allowed most consumers to bypass travel agents and their CRSs and to obtain (at very low cost) information on the flights, fares, and availability offered by airlines. We demonstrate that this alternative means of acquiring air-travel information has substantially reduced, and is likely to reduce further, any market power that the CRSs may have enjoyed previously. From a market definition perspective, this means that one cannot correctly define a relevant antitrust market for air-travel information that excludes non-CRS distribution channels.

B. A Theoretical Benchmark

In any city-pair market for air travel, consumers typically must choose among numerous flight and fare combinations. Price discrimination can explain the variation in fares of an individual airline, but it does not explain the variation in fares across airlines (and across time) for essentially the same product. Economists refer to variation across firms as price dispersion.[41] The economic literature proposes a variety of models to account for price dispersion in homogenous good markets. The basic assumption of these models is that consumers lack information about prices and that it is costly for them to become informed. In some models, suppliers pay to inform consumers (via advertising)[42] and, in others, consumers pay to become informed (via search costs).[43]

The intuition underlying the economic models is easily grasped. If consumers are perfectly informed about products and prices, then the "law of one price" must hold. Different firms cannot charge different prices for the same product because consumers will only buy from the firm charging the lowest price. Since only firms that charge the lowest price will have any sales, all firms must charge the same price. Furthermore, that price cannot exceed marginal cost, since otherwise it will profitable for a firm to slightly undercut the market price and capture a much larger share of the market. Thus, firms

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[41] *See* Severin Borenstein and Nancy L. Rose, "Competition and Price Dispersion in the U.S. Airline Industry," *Journal of Political Economy*, Vol. 102, pp. 653-683 (Aug. 1994).

[42] *See*, *e.g.*, Gerard R. Butters, "Equilibrium Distributions of Sales and Advertising Prices," *Review of Economic Studies*, vol. 44 (1977); Hal R. Varian, "A Model of Sales," *American Economic Review* (Sept. 1980); R. Preston McAfee, "Endogenous Availability, Cartels, and Merger in an Equilibrium Price Dispersion," *Journal of Economic Theory* (Feb. 1994).

[43] *See*, *e.g.*, Kenneth Burdett and Kenneth L. Judd, "Equilibrium Price Dispersion," *Econometrica*, Vol. 51 (1983); Dale Stahl, "Oligopolistic Pricing with Sequential Consumer Search," *American Economic Review* (Sept. 1989); Dale Stahl, "Oligopolistic Pricing with Heterogeneous Consumer Search," *International Journal of Industrial Organization* (Apr. 1996); R. Preston McAfee, "Multiproduct Equilibrium Price Dispersion," *Journal of Economic Theory* (Oct. 1995).

selling homogenous products in markets where consumers are perfectly informed make zero economic profits.

However, if consumers are not perfectly informed and search is costly, the competitive outcome is not achieved. If all consumers search for and obtain the lowest price, then there can be no price dispersion. But if there is no price dispersion, then consumers have no reason to search. Hence, the equilibrium in these models involves some, but not all, of the consumers searching for the lowest price, and firms charging different prices above marginal cost. Firms that charge higher prices make fewer sales (i.e., they sell only to those consumers who search less). In these circumstances, the "law of one price" does not hold, and the market failure is buyers' lack of information about prices.[44]

Economic theory yields several insights relevant to airline markets. First, it explains price dispersion in airline markets. Second, it predicts that any technology that lowers search costs, such as the Internet, will lead to lower prices and more competitive airline markets. Third, the competition among airlines to sell to consumers who search (e.g., consumers with access to the Internet) lowers overall prices and benefits consumers who do not search (e.g., consumers without access to the Internet). As the portion of consumers who search increases, prices fall and all consumers benefit. Finally, it implies that airlines have an incentive to raise consumer search costs and not to reduce them. The airlines prefer a market in which consumers are not able to compare all fares in a

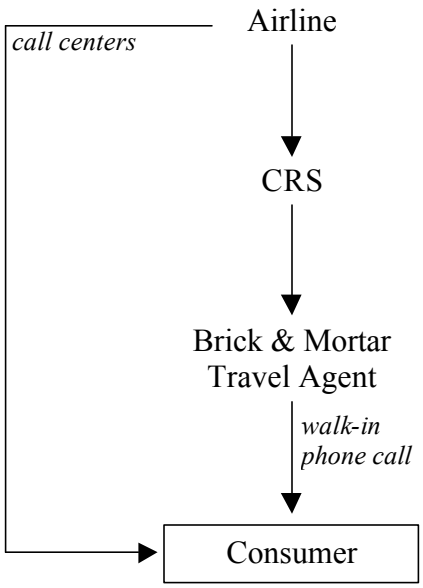
[44] A "market failure" is an imperfection in a price system that prevents an efficient allocation of resources. *See*, *e.g.*, Paul A. Samuelson and William D. Nordhaus, ECONOMICS, New York: McGraw-Hill (14th ed. 1992), p. 741. Natural monopoly, imperfect competition, asymmetry of information, and externalities are all examples of possible market failure.

city-pair market. This point is particularly important to our discussion of airline-owned CRSs.

C. The Historical Market for Air-Travel Information

The standard model in the economic literature corresponds to airline markets in which consumers can only obtain information regarding airfares in a city-pair market by calling the airlines directly or by using the services of a travel agent to call the airlines on their behalf. The CRSs were developed by the airlines to reduce search costs for travel agents but not for consumers, since consumers did not have direct access to CRSs. This led to the market structure depicted in Figure One. Most consumers purchased tickets through travel agents because travel agents were the only ones that had ready access to the flight and fare information of all of the airlines. The alternative was to use the airlines' call centers, but the time costs of doing so were too high for most consumers, who would have had to call *each* airline to complete a search.

FIGURE ONE
TRADITIONAL INFORMATION FLOW



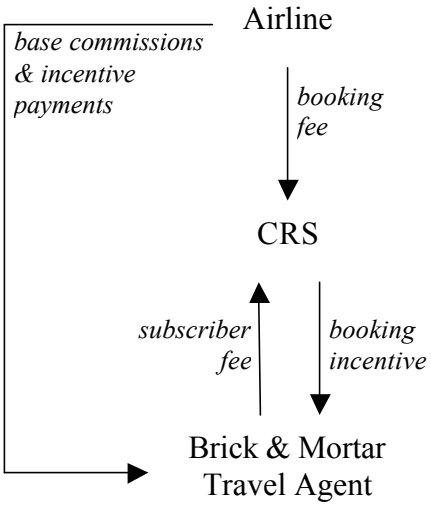
Consumers in this situation were uninformed. They had to rely upon the travel agent, and the CRS to which the agency subscribed, to select the flights that best met their needs. But the uninformed consumer gives rise to a certain "hidden action" problem, referred to by economists as the "moral hazard" problem.[45] Travel agents could provide less-than-best advice on flights and fares to consumers, and consumers would not be able to easily verify the quality of the advice.

The payment flows shown in Figure Two imply that travel agents and airline-owned CRSs had financial incentives to be less than diligent. The travel agency's revenue was derived almost exclusively from commissions paid by airlines. That revenue might include supplemental incentive payments (also referred to as "override

[45] "Moral hazard" refers to any situation where one side has an incentive to change the terms of exchange, unobserved by the other side. *See* Jeffrey Church and Roger Ware, INDUSTRIAL ORGANIZATION: A STRATEGIC APPROACH, Irwin McGraw-Hill (1999), p. 191.

commissions"), which airlines paid to those agents who demonstrated they could move traffic to increase their share on a particular route. Thus, travel agency compensation from a booking could vary depending upon which airline obtained the booking. Airline-owned CRSs had an obvious incentive to structure displays and booking incentives so that the travel agents gave the owner's flights and fares preferential treatment. In fact, because the travel agencies were being paid by the CRS and airlines, they were primarily or exclusively agents for the airlines, and not for consumers.

FIGURE TWO
TRADITIONAL PAYMENT FLOW



A striking feature of Figure Two is that consumers did not pay directly for the information services provided by the CRS and travel agent. That is, the price of the airline ticket was the same whether the consumer purchased it directly from the airline or indirectly through the travel agent. In this sense, the consumer's cost of acquiring air-travel information was bundled into the cost of the airline ticket. Since a travel agency

could more easily check the flights and fares offered by the different airlines, it is not surprising that most consumers booked their tickets through a travel agency.

In theory, the CRSs could have eliminated the search costs for consumers. In practice, they did not. One reason is that the CRSs were owned by airlines. Consistent with the predictions of the theoretical model, airlines did not want to cross-list their flight and fare information on each other's CRS so that travel agents could identify the best fare and flight combination for their customers. The Department had to force the airlines to participate on each other's CRS by imposing the mandatory participation rule of the 1992 CRS Rules.

The second reason is that, even with complete information from CRSs, travel agents have typically acted as agents for airlines rather than agents for the consumers. The Department has essentially recognized that this is so. Indeed, neither the Department nor the CAB have ever identified a travel agent's failure to provide passengers with complete information on competing alternative flights and fares, or the failure to disclose the existence of override commissions, to be unfair methods of competition or deceptive trade practices.[46] The buyers' lack of information about flights and fares continues to be the primary source of market failure in the market for air-travel information.

In sum, CRS providers were the major suppliers of air-travel information in the early- to mid-1980s. As shown in Table Eight, approximately 88 percent of bookings during that period were made using CRSs. However, as discussed in the next section of our report, that situation has changed dramatically, with the share of total bookings accounted for by CRSs now approaching 50 percent and expected to continue to fall. The

[46] *See* 49 C.F.R. § 399.80 (enumerating travel agent practices deemed false and misleading).

fundamental causes of this decline have important implications for the definition of the relevant antitrust market for air-travel information, as described in the next section.

D. The Current Market for Air-Travel Information

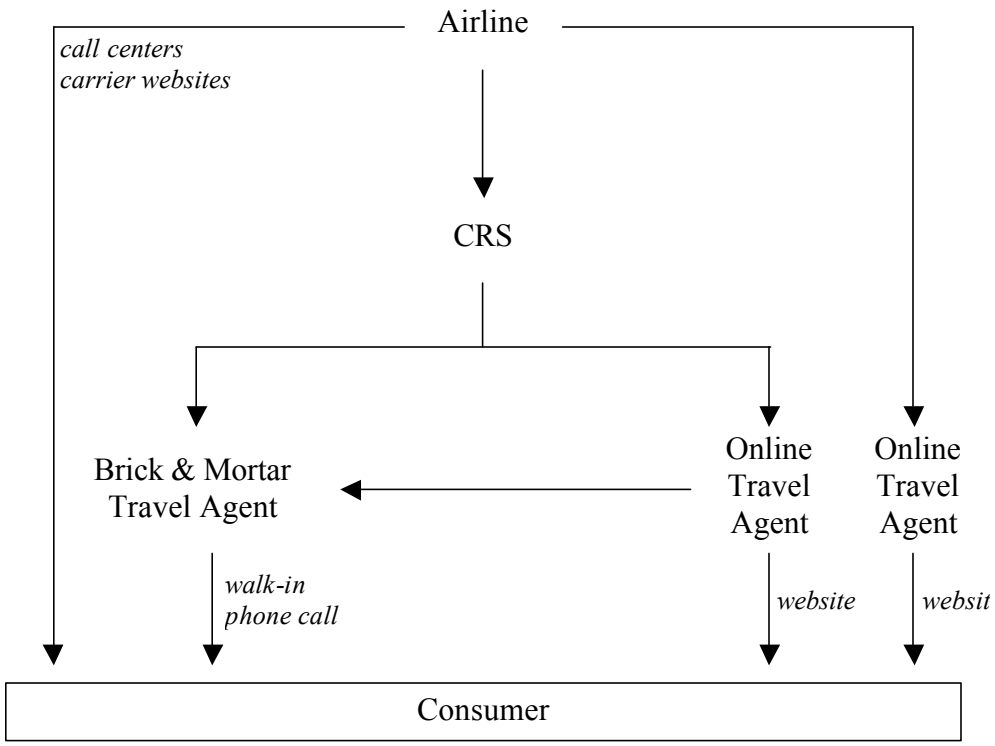
In many information markets, the Internet has largely eliminated the danger that an uninformed consumer will be deprived of the value of needed information, by dramatically reducing the costs of acquiring and transmitting information. Instead of calling the supplier for price quotations, the buyer can obtain the supplier's list of products and prices directly from its website. The Internet has also given rise to a different kind of information supplier, the "online" travel agent. Buyers may now shop online and view lists of prices charged by *different* suppliers for products that range from hardware and software (e.g., at Shopper.com) to mortgages (e.g., at Mortgagequotes.com).[47] In fact, in information markets with many brick and mortar agents, there is a market for information regarding the brick and mortar agents themselves. For example, in real estate, online agents such as Realty.com and Realtor.com provide buyers with information about real estate agents and property listings. Individual buyers who do not themselves take advantage of information on the Internet largely benefit from its existence, since it is difficult for brick and mortar agents to know whether their customer is checking up on them.

The market for air-travel information has seen similar developments. Figure Three describes the structure of the information (and booking) flows in the market today. Consumers can, with a click of the mouse, be informed about the flights and fares of

[47] Michael Baye and John Morgan, "Information Gatekeepers on the Internet and the Competitiveness of Homogenous Product Markets," *American Economic Review* (June 2001).

many airlines at essentially zero cost by accessing online travel agencies, or by accessing carrier websites directly, or through content aggregators, such as SideStep. They can use this information to bypass the brick and mortar travel agents and book with an online agency, or to bypass the travel agents and CRSs by booking online with a carrier at its website.[48] Consumers can also use the Internet to monitor the information they receive from their travel agents.

FIGURE THREE
MODERN INFORMATION FLOWS



[48] According to R.J. Fahy, recently the Executive Director of the National Commission to Ensure Consumer Information and Choice in the Airline Industry ("NCECIC"), 75 percent of U.S. adults use computers, and 66 percent access the Internet. Of the Internet-using population, 66 percent researched travel information online, and 42 percent purchased or reserved travel via the computer (spending an estimated $18.7 billion in 2001). Mr. Fahy also cites the results of a 2001 Plog survey of air travelers with an email address, which reported that nearly 80 percent of the sample had used the Internet to purchase travel. *See* Declaration of R.J. Fahy, App. 3, p. 6.

The Internet has become an integral part of almost every travel agency.[49] According to American Society of Travel Agents ("ASTA"), no less than 98 percent of agencies surveyed have Internet access at their offices, up from 24 percent in 1995.[50] Eighty percent of travel agencies provide Internet access for every staff member at his or her workstation.[51] Moreover, brick and mortar agencies increasingly use the Internet to gather travel information, with 94 percent of all travel agencies reporting that they have conducted research online.[52] Internet bookings by travel agencies are growing, with nearly 56 percent of ASTA agencies reporting the use of the Internet to book tickets.[53] Of course, not all travel agents and consumers need to access and use the Internet for this alternative to limit effectively the exercise of market power by CRSs. Competition for marginal customer confers competitive benefits to all consumers, including those who lack access to the Internet as a travel information source.

As Figure Three makes clear, the Internet also works to eliminate the partially informed, less than diligent, travel agent. Travel agents can use the Internet to access online agents of competing CRSs and websites of carriers that do not participate on any CRS. Thus, travel agents are no longer locked into a single CRS, and there is no reason

[49] With regard to travel agencies, R.J. Fahy notes that nearly all (94 percent) employ the Internet to gather travel information and that more than half (56 percent) have purchased directly from online supplier sources. *See* Declaration of R.J. Fahy, App. 3, p. 6 (citing ASTA Automation Study). According to Mr. Fahy, airlines such as Northwest and Delta have also launched websites specifically designed for travel agent use. *Id.* at 7.

[50] American Society of Travel Agents, *Agency Automation 2002* (Oct. 2002), at 3 (hereinafter "ASTA Survey").

[51] ASTA Survey at 3.

[52] ASTA Survey at 3.

[53] ASTA Survey at 3.

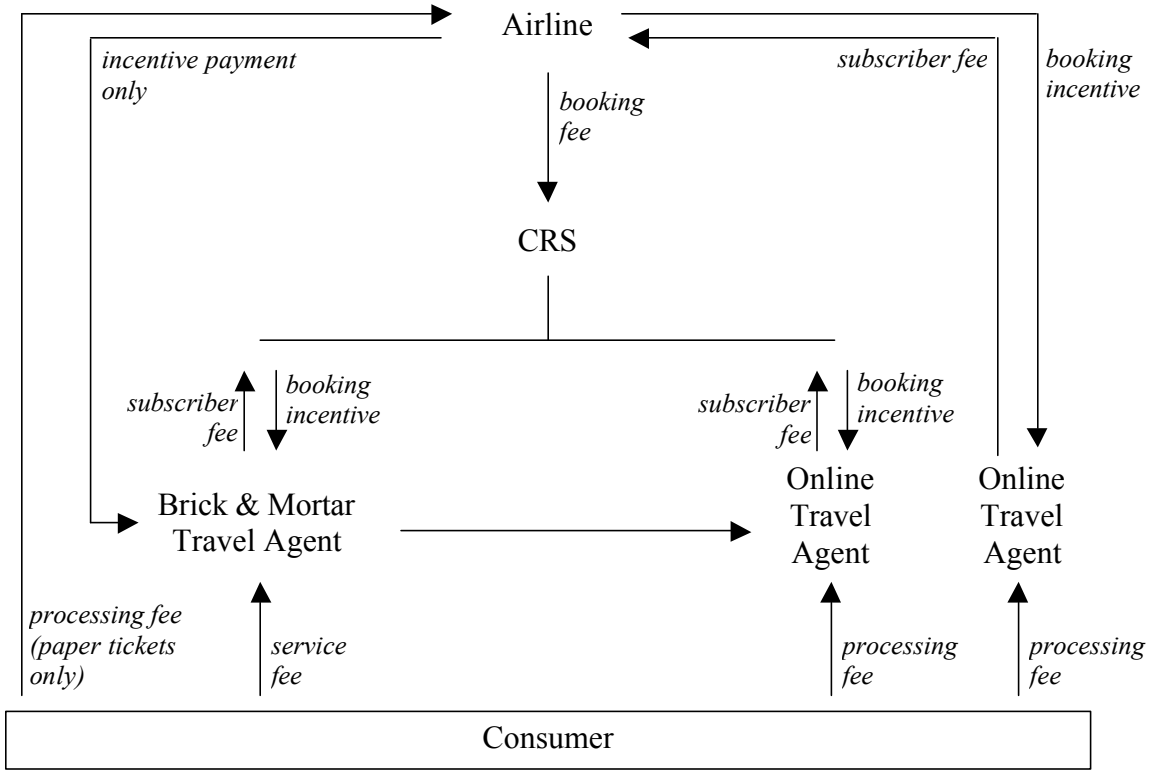
why they cannot find the lowest fare meeting the needs of a customer. Travel agents that fail to do so will tend to lose customers to those who do.

The impact of the Internet on booking flows is documented in Table Eight. Carrier direct ticketing has grown substantially, from only 12 percent of total bookings in 1983 to an estimated 47 percent in 2002. Some of the growth is explained by the growth of low-cost carriers such as Southwest that rely heavily on call centers. But much of the increase (probably the larger part of the increase) over the past five years is due to consumers' use of carriers' websites. Table Nine provides the share of revenues booked online for the different carriers and demonstrates that, even for carriers such as Southwest, websites are replacing call centers. Online travel agencies did not exist ten years ago, but they now account for nearly 11 percent of all bookings. Brick and mortar travel agents have seen their share of booking decline from 88 percent in 1983 to slightly more than 40 percent in 2002. The trend toward online booking does not appear to be slowing. In fact, it is likely to continue as carriers increasingly use "web fares," boarding passes and frequent flyer miles to make their websites more attractive to consumers.

The travel agents, of course, may not earn as much by booking on a competing CRS or a carrier website. Indeed, in the traditional market structure, they earned nothing. Therefore, it is not surprising to find that compensation for travel agents has changed with the advent of the Internet (see Figure Four). Airlines no longer pay base commissions to travel agents, and, as discussed more fully below, travel agents subscriber fees to CRSs are often more than offset by the incentive payments paid to them. The travel agencies' main sources of income from the sale of airline tickets are the service fees paid by consumers, and the booking incentives that CRSs pay to provide

agents an incentive to book through them whenever feasible. Competitive pressure from informed consumers has forced travel agents to act as their agents rather than agents for the CRS or airlines, and to be paid accordingly.

FIGURE FOUR
MODERN PAYMENT FLOWS



The Internet has also dramatically changed the way in which CRSs compete with each other. In the traditional market, CRSs competed for travel agents. In the modern market, although CRSs do not sell directly to the traveling public, they have established or supported online travel agencies to assure access to consumers directly. If Sabre hosts more flights and fares than Worldspan, then Travelocity is offering a higher quality product than is Expedia, all else constant, and *all* consumers should switch to Travelocity. Assuming other characteristics of the service offerings are the same, there is

no reason for an informed consumer to click on Expedia if Travelocity contains information relating not only to the flights and fares on Expedia but also to flights and fares of other airlines. The same basic logic applies to brick and mortar travel agencies. Travel agents of agencies that subscribe to Worldspan would have to check Travelocity and book online if the carrier offering the best flight-time-fare combination for the customer is not a participant in Worldspan. If this hypothetical situation continued, the agencies would eventually subscribe to Sabre.

Thus, contrary to the view expressed in the NPRM, the evidence suggests that (1) consumers no longer purchase tickets blindly from brick and mortar agents, but increasingly bypass travel agents (and CRSs) checking alternatives or by booking online, and (2) travel agencies with Internet access are not locked into a single CRS, since they can query and book on carrier websites and competing CRSs via their online agencies. Airlines do not have to be on every CRS to gain access to consumers and their agents. At most, they need to be on a single CRS with an online agency. We conclude, therefore, that CRSs are not essential facilities.[54]

Southwest and JetBlue are examples that support our analysis. Southwest, an airline that has grown and successfully entered many city-pair markets, uses Sabre as its only CRS (at a lower level of functionality), and increasingly sells its tickets directly on its own website.[55] Southwest does not rely on Travelocity since its flights cannot be booked through that online agency. JetBlue is also on only one of the CRSs. Apparently,

[54] Although the term "essential facilities" has no rigorous definition in economics, the term generally refers to a facility to which rivals require access in order to compete profitably. In the current matter, there can be no dispute that CRSs are not essential facilities given the large number of customers who obtain air-travel information with accessing a CRS.
[55] NPRM at 69379.

these airlines believe that a single CRS with an online agency, in combination with their own websites and call centers, is sufficient to access consumers.

Internet sources such as airline websites and online travel agencies provide alternative sources of information regarding airline flights and fares and the ability to book tickets. Therefore, they must be considered substitutes to the traditional CRS/travel agency channel. Indeed, the discussion above demonstrates that they are particularly important substitutes, in that their emergence has significantly changed the market for air-travel information. These new information sources (i.e., airline websites and online travel agents) provide a significant competitive constraint on travel agents and CRSs. The view implicit in the NPRM is that the relevant antitrust market is limited to the traditional CRS/travel agency channel. This view is wrong. An antitrust market defined to include only CRSs, or only an individual CRS, is not economically meaningful, because it ignores the presence and effect of substitute sources of air-travel information that have gained widespread use.

In this regard, it is worth recalling how the U.S. Department of Justice and Federal Trade Commission's "Horizontal Merger Guidelines" define relevant antitrust markets.[56] The Merger Guidelines state: "Market definition focuses solely on demand substitution factors – i.e., possible consumer responses."[57] Thus, the Guidelines define an antitrust market as:

> a product or group of products and a geographic area in which it is produced or sold such that a hypothetical profit-maximizing firm, not subject to price regulation, that was the only present and future producer or seller of those products in that area likely would impose at least a

[56] See, U.S. Department of Justice and Federal Trade Commission, HORIZONTAL MERGER GUIDELINES (revised April 8, 1997) (hereinafter "Merger Guidelines").

[57] Merger Guidelines, at § 1.0.

> "small but significant and nontransitory" increase in price, assuming the terms of sale of all other products are held constant. A relevant market is a group of products and geographic area that is no bigger than necessary to satisfy this test.[58]

For the reasons discussed above, we conclude that the relevant antitrust market is "air-travel information."

V. MARKET STRUCTURE

As discussed in the Merger Guidelines, having defined the relevant antitrust market, the next step is to identify the firms that compete in that market, to determine the competitive constraints on the firm asserted to have market power. Participants in this information market include: CRS providers and their travel agency subscribers (both brick and mortar and online), online travel agencies not subscribing to CRSs, the websites and call centers of individual airlines, and content aggregators like SideStep. Travel agencies and consumers view each of these alternative sources of air-travel information as reasonably interchangeable in use. As demonstrated above, the share of total bookings made via CRS systems has declined considerably since the early 1980s, such that CRSs now account for only about one-half of total bookings.

Table Ten reports concentration in the market for air-travel information using the HHI. As discussed above, the providers of air-travel information include CRS providers and their travel agencies (both brick and mortar and online), online travel agencies not subscribing to CRSs, and the websites and call centers of individual airlines. We assume the travel agency channel, which accounts for approximately 53 percent of total U.S.

[58] Merger Guidelines, at § 1.0.

bookings, is served by the four CRSs (i.e., we adopt a conservative approach and ignore online travel agencies that bypass CRSs). Unfortunately, information is not available for the carrier direct bookings of individual airlines. Therefore, we estimate these booking shares based on the assumption that the relative booking shares of individual carriers can be approximated by their relative shares of U.S. enplanements. Based on this assumption, the HHI in the market for air-travel information equals approximately 1,197, or the equivalent of 8.4 equal-size firms.[59] Within the defined market, Sabre's share is approximately 24.6 percent, which does not represent a predominant share of the market. These statistics demonstrate that the relevant market is only moderately concentrated, according to the criteria in the Merger Guidelines.

An additional structural characteristic of the air-travel information market is the ability of new firms to enter. Strong evidence here shows that entry barriers are low. Recall that Orbitz has announced plans to connect directly with airlines, bypassing Worldspan, and has signed agreements to direct connect with ten carriers, including

[59] We performed a second HHI calculation in which we adopt an alternative procedure for estimating the carrier-direct bookings of individual airlines. In particular, using information reported in PhoCusWright's ONLINE TRAVEL OVERVIEW: MARKET SIZE AND FORECASTS 2002-2005, we estimate the revenue each airline obtained from its carrier-direct bookings. We then estimate booking shares based on the assumption that the relative booking shares of individual carriers can be approximated by their relative shares of carrier-direct revenues, rather than enplanements. Using this approach, the HHI of the market for air-travel equals approximately 1,215.

We use the following procedure to estimate carrier-direct revenue for individual airlines. For each airline, PhoCusWright reports (1) total airline revenue for the period January through June 2002; (2) the percentage of revenue booked on the Internet during that period; and (3) the percentage of Internet revenues obtained from carrier websites. Using these data, we first derive airline revenues obtained from their own websites. We then estimate the revenue carriers obtain from their call centers by assuming each carrier books approximately 40 percent of its total revenue through brick and mortar travel agencies, (i.e., the average percentage level of bookings through brick and mortar travel agencies for all carriers, see Table Eight). This allows us to calculate, as a residual, the revenues carriers obtain from their call centers (i.e., call center revenue equals (1) total revenue minus (2) revenue booked through the Internet minus (3) revenue booked through brick and mortar travel agencies). We then add carrier website and call center revenues to determine total carrier-direct revenue. Finally, we estimate booking shares based on the assumption that the relative booking shares of individual carriers can be approximated by their relative shares of carrier direct revenues.

American, America West, Continental, Delta, Northwest, United, and US Airways, which collectively account for approximately 68 percent of U.S. enplanements. At present, Orbitz has implemented such direct connections for American and Northwest. The ability of Orbitz to create a new source of air-travel information, completely bypassing existing CRSs and yet at the same time aggregating the flight and fare information of numerous air carriers, demonstrates the lack of entry barriers into this market. The existence of low barriers to entry is a further structural characteristic of the market that demonstrates its competitive nature.

The NPRM asserts that CRSs have been able to maintain "high" booking fees (and therefore have market power). The NPRM's apparent justifications for the belief that booking fees are "high" is its view that "participation in each system is necessary,"[60] and that "the decline in computer-related costs suggests that the system's costs of serving the airlines could be increasing at a rate lower than the general inflation rate."[61] While the assertion in the NPRM is that "systems usually increase their fees annually," they fail to consider the extent to which the costs of CRS providers have also risen.

In discussing the costs imposed by system practices, the observation in the NPRM is that the "fees charged airlines have not been effectively disciplined by competition and may well exceed system costs by a significant amount."[62] But the support in the NPRM for this statement is a March 1991 study. Of course, such a study, even if correct at the time, pre-dates the widespread use of the Internet, which has provided a bypass

[60] NPRM at 69370.

[61] NPRM at 69400. The NPRM acknowledges that "we have made no finding that each system's booking fees exceed the system's costs of providing services to airlines." *Id.*

[62] NPRM at 69382.

alternative to CRSs, and pre-dates the emergence of independent CRSs. The presence of the Internet permits the airlines to exert pressure on the CRSs to keep booking fees low. Since the netback price to the airline equals the ticket price less booking fees, it is profitable for an airline to post special "web fares" on its website that are lower than the fares it provides to the CRS but higher than its netback price (i.e., the price of a ticket sold using the CRS less booking fees.) Web fares induce consumers to check the airline's website and encourage them to book direct. Although web fares typically account for only two percent of bookings, the presence of web fares has certainly contributed to the growing use of the Internet by consumers.

The effect of web fares on booking fees is demonstrated by the booking fee reductions proposed by Sabre and Galileo. In particular, Sabre's concern that its travel agency clients will lose bookings to airline-owned websites or to Orbitz resulted in its proposal to reduce booking fees on all flights by ten percent (and to freeze booking fees at this level for three years) in exchange for the carrier's agreement to provide all of its web fares to Sabre and its travel agency clients and to provide other protections to those Sabre users.[63] US Airways and other several smaller carriers have accepted Sabre's offer. United Airlines and US Airways have accepted a similar offer made by Galileo.

The NPRM conjectures that CRS costs should be falling because of an unspecified "decline in computer-related costs." While the cost of computer processing of a single bit of data has indeed fallen over time, total computer costs of CRS providers have in fact increased. This increase in cost is attributable to the same market

[63] Source: Sabre. Sabre's offer also requires the carrier to make a three-year commitment to remain at the highest level of participation and not to deny Sabre users other facilities for the sale of their flights, such as the ability of consumers booked through Sabre to check in via the carrier's web site if that facility is offered to consumers generally.

developments that have made CRSs face new competition. Between 1993 and 2002, Sabre's data processing cost per message declined. However, during this same period, the number of messages Sabre processed per booking increased by more than 260 percent.[64] The increase in messages is derived from consumers' frequent querying of on-line travel agencies to search for lower fares, and traditional travel agents increasing their queries to seek discount fares for their clients. As a result, Sabre's data processing cost per booking increased between 1993 and 2002, despite the reduction in data processing cost per message.

Another important component of Sabre's variable expenses – incentive payments by Sabre to travel agencies less subscriber charges paid by travel agencies to Sabre – has also increased dramatically. Prior to 1996, Sabre subscriber fees exceeded the incentive payments made to travel agencies. However, beginning in the mid-1990s, incentive payments to travel agencies began to exceed subscriber fees. As Galileo told the National Commission, travel agent incentives now exceed $1 per booking. Sabre's experience has been similar. *See* Wilson Dec., App. 2, pp. 16-17.

Taking the above cost factors into account (i.e., the decline data processing costs, the increase in messages per bookings, and the increase in net travel agency incentive payments per booking), Sabre's variable expenses per booking increased by at least 76 percent from 1983 to 2002, or at least 9 percent per year on average. Thus, Sabre's variable expenses have increased more rapidly than its booking fees over the past five years. This finding refutes the claim that Sabre has substantial market power, as well as

[64] Wilson Dec., App. 2, p. 13.

the NPRM's reliance on high or increasing booking fees as evidence of CRS market power.

VI. ECONOMIC ANALYSIS OF THE NPRM

In this section we provide our economic analysis of the CRS rules proposed in the NPRM. We specifically assess the rationale expressed in the NPRM regarding (1) the continued regulation of subscriber contracts and CRS displays and (2) the elimination of the mandatory participation and non-discrimination rules on airline-owned CRSs.

The threshold question that needs to be asked in considering whether regulation is necessary or advisable here is: What are the market failures that the rules in the NPRM are trying to correct? This question is salient for two reasons. First, like most economists, we believe that regulation can improve market outcomes only if the conditions for a competitive market fail to be present, since competitive markets allocate resources efficiently. Therefore, the presence of a market failure is a necessary condition for regulation. However, it may not be a sufficient condition. Regulation is costly and creates its own distortions.[65] Suppliers in regulated markets typically have poor incentives to reduce costs and to invest in innovation. They may also be required by regulation to adopt inefficient technologies. For example, when the markets for air travel were regulated, airlines were effectively compelled to adopt networks that failed to take advantage of the economies of density of hub-and-spoke networks. Therefore, the second reason for identifying the market failures that the rules proposed in the NPRM seek to

[65] Antitrust is often distinguished from ongoing regulation, in that antitrust seeks to correct market failures and then allow market forces to establish actual price and output outcomes, rather than to specify outcomes. *See* F.M. Scherer and David Ross, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE (3d ed. 1990), at 11-14.

address is to ensure that these rules are targeting problems, not symptoms of regulation itself, and are not making matters worse.

We observe that the Internet largely solves the market failures that motivate many of the existing and proposed CRS rules. The Internet enables most consumers to be perfectly informed buyers of air travel services at relatively low cost. Informed consumers will force travel agents and CRSs to be diligent and honest. As noted above, not all consumers have the capacity or the ability to take advantage of the Internet. However, the interests of these consumers are effectively protected by the ability of most consumers to verify independently air-travel information.

The economic theory described above predicts that overall airline fares and profits will decline as use of the Internet grows. The number of travel agents and their profits will decline, since many consumers will act as his or her own travel agent. Finally, increased pressure will be placed upon CRS profit margins, from below by travel agents demanding payment to book through the CRS rather than via the Internet, and from above by airlines whose cost of not participating on a CRS has fallen.

A. Analysis and Policy Recommendations Regarding Rules Governing Subscriber Contracts and Display Bias

In this section we examine the specific rules on subscriber contracts and display bias proposed by NPRM. The regulations proposed in the NPRM are largely superfluous because of changes in market conditions that have already occurred. The principal regulation that should be retained, as long as a significant CRS is controlled by major airlines, is mandatory participation; unfortunately, the NPRM proposes to revoke that regulation, which continues to be needed to the extent that any CRS is owned or controlled by one or more major airlines and any CRS rules exist.

1. Subscriber Contracts

Traditional subscriber contracts between CRS and brick and mortar travel contained provisions governing subscriber fees and incentive payments, exclusivity, minimum booking requirements, equipment leasing, and early termination penalties. We discuss, in turn, the changes in these contract terms that have occurred in recent years.

Subscription fees and incentive payments. Subscription fees have been substantially reduced relative to the incentive payments provided to travel agencies. Since 1996, Sabre subscribers, on average, have received incentive payments that exceed their subscription fees. Sabre provides travel agents per-booking incentive payments as well as substantial up-front payments to travel agencies at the beginning of their contract term.

Other changes in contract terms are best understood with reference to the type of contracts Sabre is currently offering: the Optimal Earnings Plan ("OEP") and the Simplicity Plan. The OEP is tailored to the needs of larger travel agencies (agencies with more than 10,000 annual bookings) while the Simplicity Plan is tailored to smaller agencies. Currently, 39 percent of Sabre's subscriber contracts are of the new types, a percentage that is expected to rise to 67 percent by the end of 2004 and to 100 percent by 2006.[66] Sabre's largest subscriber agencies tend to use multiple CRSs and have individually negotiated arrangements with Sabre.

[66] Source: Sabre.

Minimum booking and exclusivity requirements. Contracts with minimum booking requirements (also referred to as productivity pricing) provide travel agencies with discounts for system charges and equipment rental if the agency meets a threshold minimum booking level for each terminal. Sabre's Simplicity Plan offers an incentive payment on all bookings if the agency achieves 1,000 bookings annually.[67] If an agency appears unable to meet the 1,000-booking requirement, the agent is permitted to become a member of the Nexion collection of travel agents and avoid any penalty shortfalls.[68] There is no minimum-booking requirement in Sabre's OEP contract.[69]

The ASTA survey indicates that across all four CRS providers, minimum booking requirements for incentive payments have fallen significantly over time. Minimum segment booking requirements for Galileo subscribers (per terminal per month) has fallen from 348 segment bookings in 1998 to 217 segment bookings 2002, a decline of approximately 37 percent.[70] During the same time period, minimum segment booking requirements on Sabre, Amadeus, and Worldspan declined by approximately 31 percent, 18 percent, and 13 percent, respectively.[71]

The ASTA survey finds that productivity pricing in travel agencies contracts has declined sharply from 1998 to 2002. According to ASTA, 90.7 percent of all agencies

[67] Sabre, Presentation before the U.S. Department of Justice re: "Sabre Subscriber Contract Overview" (Jan. 24, 2003), at 10.

[68] Nexion is a network of multiple CRSs. *See*, *e.g.*, Sabre, "Qualified Vendors Program: Nexion, Inc.," http://www.sabre.com/about/vendors/qualified/nexionProfile.html (accessed Mar. 9, 2003).

[69] Sabre, Presentation before the U.S. Department of Justice re: "Sabre Subscriber Contract Overview" (Jan. 24, 2003), at 5.

[70] ASTA Survey at 38.

[71] ASTA Survey at 38.

utilized this pricing option in 1998, but this figure declined to 55.8 percent in 2002.[72] As noted by ASTA, this decrease has been matched by the rise in the number of agencies opting for a fixed monthly payment. In 1998, approximately 7 percent of the agencies surveyed operated under a fixed payment plan as compared to 22 percent today.[73] According to ASTA, the surge in Internet booking sites with reservation capabilities and the airline commission cuts contributed to the agency's decision to select the fixed-payment option.

With respect to exclusivity provisions, Sabre's Simplicity Plan requires that all CRS booking must be made on Sabre, however, the plan permits agencies to use the Internet, as does the OEP contract.[74] Previous Sabre contracts did not permit the travel agent to use a terminal provided by Sabre to access other CRSs or the Internet. While there are such provisions in the older Sabre contracts, we understand that currently these provisions are no longer enforced. Thus, Sabre subscribers can obtain flight and fare information through Sabre but then book directly with an airline via the Internet. In this scenario, Sabre would not earn a booking fee.

Currently, each of Sabre's ten largest agencies (defined by bookings) has access to multiple CRSs. These agencies account for 32 percent of Sabre's total bookings. Fifty-four percent of Sabre's 100 largest agencies (accounting for 42 percent of Sabre's total bookings) have access to multiple CRSs.[75]

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[72] ASTA Survey at 36.

[73] ASTA Survey at 36.

[74] Sabre, Presentation before the U.S. Department of Justice re: "Sabre Subscriber Contract Overview" (Jan. 24, 2003), at 4

[75] Source: Sabre.

The view expressed in the NPRM is that minimum booking provisions may be anticompetitive because they discourage travel agencies from using multiple CRSs or other databases for bookings.[76] The NPRM states that CRSs "set the booking quota high enough that the agency as a practical matter cannot afford to make substantial use of another system or database."[77] Minimum booking requirements are essentially volume discounts. While minimum use provisions may encourage a travel agency to use a single CRS, this is not anticompetitive in and of itself. In arguing that minimum booking clauses (i.e., volume discounts) are anticompetitive, the views expressed in the NPRM ignore the competition among CRSs for subscriber contracts and the impact of the Internet. Travel agents, who themselves must compete for passengers, are unlikely to agree to restrictive minimum booking requirements that would prevent them from serving their customers best interests. The empirical evidence presented above supports this conclusion, since minimum booking requirements have become less restrictive over time. Moreover, in addition to the cost of regulation, banning volume discounts could also prevent more efficient market outcomes.[78]

A concern is expressed in the NPRM regarding contract provisions that "limit the ability of most travel agencies to use multiple systems and other means of obtaining airline information and booking airline seats" (i.e., exclusivity clauses).[79] Once again, if exclusivity clauses prevent travel agents from serving their customers, the agents are

[76] *See* NPRM at 69408.

[77] NPRM at 69408.

[78] *See*, *e.g.*, Hal R. Varian, "Price Discrimination and Social Welfare," *American Economic Review*, vol. 75, no. 4, pp. 870-875 (1985).

[79] NPRM at 69406.

unlikely to agree to such provisions. In fact, as noted above, Sabre does not currently enforce exclusivity clauses for use of its hardware in its older contracts, and its Optimal Earning Plan contracts do not contain exclusivity clauses. Moreover, exclusivity provisions have the potential to promote economic efficiency by preventing incentive conflicts that can arise when a travel agency represents more than one CRS.[80] A CRS may choose not to undertake an investment in a travel agency if that investment would benefit a rival CRS, even when the investment would otherwise enhance economic efficiency.

Contract duration. With respect to contract duration, the OEP provides agencies with a choice of contract durations ranging from one to five years. The average contract length for OEP subscribers is four years, with half of the OEP contracts having a three-year duration. The Simplicity Plan has a three-year duration.[81]

The term of Sabre's new contracts are consistent with the findings on contract terms reported in a recent ASTA survey. According to the survey, from 1998 to 2002, the fraction of travel agents with five-year contracts declined from 84.7 percent to 47.2 percent while the fraction of agents with three-year contracts increased from 9.3 percent to 39.2 percent.[82] In addition, contracts for "other" durations (largely contracts shorter than three years) increased from 5.9 percent to 13.6 percent over the same time period (see Table Eleven).

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[80] *See*, *e.g.*, B. Douglas Bernheim and Michael D. Whinston, "Exclusive Dealing," *Journal of Political Economy*, vol. 106, no. 1, pp. 64-103 (1998).

[81] Sabre, Presentation before the U.S. Department of Justice re: "Sabre Subscriber Contract Overview" (Jan. 24, 2003), at 5.

[82] ASTA Survey at 35.

In the NPRM, the DOT states that long-term contracts can harm travel agencies because such contracts may prevent travel agencies from switching between CRSs.[83] As discussed below, however, not all contracts have the same effective dates or durations. A substantial portion of Sabre's subscriber contracts expire each year. If, as is likely, a significant fraction of travel agencies are not locked into a CRS at any given time (because of contract expirations), then it is unclear how consumers can be harmed by long-term contracts. We note also that, in a market with informed consumers and competition, travel agents are unlikely to agree to contract durations that are not in the best interest of their customers. Travel agents that fail to serve customers well are eventually driven from the market. The evidence presented in Table Eleven supports this conclusion. On the other hand, regulating contract duration does have undesirable costs. In addition to the cost of regulation, as noted by the DOT in the NPRM, contracts can provide economic benefits by reducing uncertainty, helping to spread risk, and reducing contract negotiation costs.[84]

Equipment leasing. With respect to equipment leasing provisions, prior CRS contracts were structured such that when a travel agency added a terminal, it was required to sign a new contract with the CRS. However, the addition of a terminal to a travel agency location does not trigger an increase in the duration of Sabre's new contracts. While there are such provisions in the older Sabre contracts, we understand that currently these provisions are not enforced.

[83] *See* NPRM at 69407.

[84] *See* NPRM at 69407.

Although Sabre continues to lease equipment to travel agencies with OEP contracts, Sabre encourages the agencies to purchase their own hardware. For example, if a subscriber breaks the equipment lease, the subscriber must pay a fee to Sabre. However, the fee is waived if the leased equipment is replaced with subscriber-owned equipment. Sabre also provides a "technology fund" to the agents in the Simplicity Plan contracts that subsidizes an agency's purchases of its own equipment. In any event, as to Sabre, it currently provides less than 35 percent of the hardware its subscribers use, so there is no possible danger of this large segment of Sabre-using agencies being "locked out" of the Internet or other systems.

Early termination penalties. Finally, contracts with early termination provisions require the terminating subscriber to compensate the CRS for lost booking fees. Sabre's OEP contracts do not include liquidated damages or penalties for early termination.[85] Sabre's Simplicity Plan members can terminate their contracts without penalty if they become part of Nexion, a collective involving multiple CRSs.

The views expressed in the NPRM indicate a concern regarding the use of early termination penalties (i.e., liquidated damages clauses) because they "deter travel agencies from switching systems and make the travel agency liable for the booking fees lost by the system when the agency no longer uses it."[86] If consumers are informed and there is competition among CRSs, then travel agents will not accept liquidated damages clauses in subscriber contracts that restrict their behavior. In addition, clauses stipulating liquidated damages have the potential to promote efficiency by protecting relationship-

[85] Source: Sabre.

[86] NPRM at 69407.

specific investments.[87] Specifically, the ability to recoup some investment upon early contract termination will tend to encourage CRSs to offer up-front cash payments, technology funds, and the like, thereby increasing competition among CRSs for travel agents. The proposed regulation thus would have the opposite effect from the one apparently intended in the NPRM; it will reduce, rather than increase, innovation and competition among CRSs for travel agents.

Subscriber switching. According to ASTA, there is competition among CRSs for subscriber contracts, with nearly 76 percent of travel agencies surveyed planning to seek competing bids once their contracts expire (see Table Twelve). A significant number of Sabre subscribers chose not to renew their contract with Sabre in 2002.[88]

Of course, not all of a CRS's subscriber contracts expire at the same time because not all contracts have the same effective date or duration. Thus, some fraction of a CRS's subscriber contracts may be expected to expire in any give time period. If, as is likely, a significant fraction of each CRS's subscriber contracts expires each year, then a significant portion of that market is open to bid in each period. ASTA reports that approximately 61 percent of agents have not decided to renew their contracts once they expire.[89] Price and contract length are the top two factors the agents say they will consider in reviewing competitive bids.

In sum, the ability of consumers of air-travel information to bypass CRSs, and the emergence of independent CRSs, has forced those systems to compete vigorously for

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[87] *See*, *e.g.*, Oliver E. Williamson, THE ECONOMIC INSTITUTIONS OF CAPITALISM, New York: Free Press (1985).

[88] *See* Salop & Woodbury statement, App. 1, Table 11 (confidential).

[89] ASTA Survey at 5.

travel agencies. The resulting competition has led to contracts between CRSs and travel agencies that already have the characteristics that the NPRM seeks to enforce through regulation. Thus, market forces have largely eliminated any economic rationale for the regulations. The evidence presented above indicates that there is substantial competition at the time contracts are renewed, and the large percentage of travel agencies switching between CRSs belies any lock-in effect. Competition for contracts eliminates the need to regulate the contract provisions. Competition among CRS for travel agents and the availability of the Internet as a bypass option implies those travel agents seeking to maximize "override payments" by misinforming consumers will lose customers to those that act with the interest of the consumer in mind.

2. Display Bias

CRSs are required to provide neutral screens to brick and mortar travel agencies. They are prohibited from using any factors relating to airline identity in ordering flight and fare information and they must also make available upon request, the criteria used to order the information. However, online travel agents can and do present flight and fare information in ways that feature certain airlines. Presumably, the view expressed in the NPRM is that online consumers do not need to be protected from preferential displays by online travel agencies because these consumers are not misled by the display or, if they are deceived, then DOT can use its authority under section 411 to stop deceptive displays. But if the brick and mortar travel agent is acting on behalf of the consumer, then the same logic should apply to these agencies. Therefore, in our view, regulations regarding display bias are no longer economically justified.

B. Analysis and Policy Recommendations Regarding Mandatory Participation and Non-Discriminatory Booking Fees

As noted in the previous sections, the proliferation of Internet-based sources and the recent emergence of multiple independent CRSs have together led to the development of a competitive market for air-travel information. As we demonstrate below, however, the presence of online information sources is not by itself sufficient to ensure the continued competitiveness of these markets. Certain protections are still needed.

The NPRM expresses the view that removal of the mandatory participation requirement and non-discriminatory booking fees is necessary to limit the market power of the independent CRSs over airlines. In this section, contrary to the view expressed in the NPRM, we present evidence that the Internet has already limited the market power of CRSs. We also argue that, if the proposals in the NPRM were adopted, CRSs owned by airlines are likely to become dominant, to the detriment of consumers. This is because airlines that own CRSs will have a strong incentive to withdraw information from independent CRSs. This conduct would harm consumers because it would serve to balkanize information markets, create higher search costs for consumers, and may act as an entry barrier to emerging airlines that may be less able to inform consumers of their presence.

2. Implications of Eliminating Mandatory Participation and Non-Discriminatory Booking Fees

The rationale given in the NPRM for eliminating the mandatory and non-discrimination rules is that it will limit the market power of the CRSs and lower booking fees:

> Our proposed ending of the mandatory participation requirement and the prohibition against discriminatory booking fees may enable some airlines at least to bargain for better terms for system participation. These changes may also enable the systems to offer better terms to airlines that might otherwise choose not to participate (or choose to participate only at a low level), like some new-entrant airlines.[90]

Our main concern with this proposal is that it gives airline owners of CRSs too much market power, both in the market for air-travel information and in the product markets that it serves, the markets for air travel services. If airlines that control CRSs can withdraw from independent CRSs (or threaten to do so and demand discriminatorily low booking fees, compared to other airlines, in exchange for participating in independent CRSs), independent CRSs may have to reintegrate with airlines to compete effectively. And, in the absence of robust competition from independent CRSs, the airline-owned CRSs are likely to deter entry of new-entrant airlines by charging them excessive booking fees.

The mandatory participation rule was introduced in the 1992 CRS Rules because the DOT recognized that airlines that own CRSs have an incentive to withhold their flight information from rival CRSs. By withdrawing from a rival CRS, an airline could both degrade the utility of competing systems and make its affiliated CRS more valuable to subscribers, particularly in the airline's hub cities where it was essential for travel agencies to have access to the airline's flights and fares. Although the airline would lose bookings on the rival CRS, the loss in bookings could be outweighed by the gain in subscribers experienced by the airline's affiliated CRS (which in turn would increase the airline's bookings, at least in its hub markets).

[90] *See* NPRM at 69422.

The incentive for airlines who own CRSs to withdraw their flight information from rival CRSs is much greater today than it was in 1992. At that time, an airline would lose a significant number of bookings if it de-listed from a CRS. Most travel agencies using that CRS would simply book customers on the other airlines participating in the system. In 2003, the losses are likely to be much smaller because consumers are no longer dependent upon travel agents for their bookings, and travel agents are no longer locked into their CRS. Online customers can access the airline's flight information by checking the carrier's website or the online travel agent of the airline's affiliated CRS, and travel agents can do the same. In other words, the airline's delisting from a rival CRS is unlikely to change the information that consumers and travel agents have about flights and fares. But, if this is the case, then consumers and travel agents will continue to make the same choices, and the airline will not lose any bookings.[91]

On the other hand, the airline will enjoy substantial revenue gains from the delisting. First, it saves on booking fees by requiring consumers and travel agents to book their flights on its affiliated CRS rather than on the rival CRS. Second, it devalues the product offered by the rival CRS and enhances that of its affiliated CRS. As a result, more consumers are likely to use the airline's affiliated CRS, thereby increasing its share of all bookings. Over time, the affiliated CRS is also likely to increase its share of travel agencies and possibly gain the market power it needs to raise its booking fees to unaffiliated airlines.

[91] This assumes that travel agents act in the best interests of their customers. They cannot behave as if the airline no longer exists simply because it is not on their CRS. Elsewhere we have argued that the informed consumer disciplines this behavior. Travel agents that are less than diligent will soon lose customers to travel agencies that are diligent.

To illustrate this point further, assume that every airline listed on Worldspan is also on Sabre and available to the CRS's respective online travel agency subscribers, so online consumers are indifferent between using Expedia or Travelocity. Now suppose that the owners of Worldspan decide to withdraw from Sabre. Online consumers will surely switch from using Travelocity to Expedia since Expedia is offering more comprehensive coverage of flights and fares than Travelocity. Travel agents that subscribe to Sabre will also have to check with Expedia and book with the owners of Worldspan if they offer better flights. Thus, even though airline bookings are not affected, Worldspan's share of bookings has increased dramatically at Sabre's expense.

The above analysis suggests that eliminating the mandatory participation rule could take the "independence" out of independent CRSs. Sabre and Galileo would have to reintegrate with airlines to protect themselves against an airline-owned CRS like Worldspan. With airline owners, Sabre and Galileo could then threaten to withdraw flights of their owners from Worldspan if the owners of Worldspan try to withdraw their flights from Sabre. If booking shares of the owners of the different airline-owned CRSs are roughly equal, these threats would offset each other. However, independent CRSs have no such leverage.

How are consumers harmed if every CRS is owned by airlines? First, airlines prefer to sell their services in a market in which consumers are not fully informed about prices and products. This is one of the fundamental insights of the search models discussed in an earlier section of this report. Airlines can charge higher fares and earn higher profits if consumers are not fully in formed about flights and fares and search is costly. Competition may force airlines to cross-list their flights on each other's CRSs,

thereby providing comprehensive coverage of flights and fares. But another possible outcome is the Balkanization of the information market in which airlines participate only in their own CRS and not in any of the rival CRSs. This outcome would increase search costs to consumers and travel agents: they would have to check multiple websites instead of just one.

Second, if the market includes only airline-owned CRSs *and* the CRSs are allowed to price discriminate, then the market returns to the pre-1984 state. The 1984 CRS Rulemakings banned discriminatory booking fees to restrain airline-owned CRSs from providing its airline owners with a competitive advantage over rival airlines by charging non-affiliated airlines higher booking fees, thereby raising the non-affiliated rivals' costs. As noted by Civil Aeronautics Board (CAB):

> Before the Board prohibited discriminatory booking fees, vendors compelled the least-favored carriers to pay as much at $3 per booking while other carriers paid as little as thirty cents – and the disfavored carriers usually received the worst service, since their flights were subject to the most display bias. . . . The carriers paying the highest fees and suffering the most display bias tended to be the vendor's major competitors.[92]

At the time, the CAB chose not to regulate the level of booking fees because it felt that, although CRSs had the power to impose excessive fees on smaller airlines, the bargaining power of the larger airlines combined with the ban on discriminatory booking fees would be sufficient to prevent CRSs from charging excessive booking fees.

We believe that, to some extent, the logic of the 1984 CRS Rulings still applies. Contrary to the view expressed in the NPRM, small airlines and new-entrant airlines are unlikely to win "better terms" from airline-owned CRSs. The airline-owned CRSs have

[92] 1992 CRS Rules, Booking Fees, IV.B (internal citations omitted).

no incentive to list an emerging airline that diverts bookings away from owners. Entry costs are lower than they were in 1984 because the Internet has reduced the search costs for consumers and travel agents, but they are not zero. The reduced competition in airline markets implies marginally higher fares and, perhaps, fewer choices.

The analysis changes dramatically when the market for air-travel information includes an independent CRS. The reason is that the independent CRS and consumers share a common interest in making sure that the CRS provides the most comprehensive coverage of flights possible. Consumers want a system that offers comprehensive coverage because it allows them to find the best product with only one click of the mouse. An independent CRS wants comprehensive coverage because more flights means more bookings, and bookings fees are its main source of revenue, not airline tickets. Independent CRSs are indifferent to ticket price, as their compensation is on a flat booking fee basis. Therefore, the independent CRS has a strong incentive to list new-entrant airlines onto its system, and to maximize volume (not price) of airline tickets.

The nondiscrimination rule eliminates charging different booking fees for the same service level but it does not prohibit charging different booking fees for different service levels. Currently, the CRSs have gained some flexibility in their negotiations with the airlines by offering a lower booking fee for a lower level of service. The number of days of seat inventories stored, the speed of access the CRS gives to the airlines' reservations computers, the management information the CRS generates for the airline, and the geographical coverage the CRS offers varies according to the airline's contract with CRS. For example, Worldspan recently obtained JetBlue's flight and fare information under the condition that flights are booked through JetBlue and not through

agents subscribing to Worldspan. Similarly, Southwest negotiated a lower booking fee from Sabre in exchange for a lower level of service. By tailoring the functionality of the system to the airline's needs, CRSs are able to adjust the booking fees. The elimination of the non-discrimination rule would give the CRSs and airlines more flexibility to negotiate a mutually beneficial agreement, one that could provide higher service levels to the consumer.

Competition between the CRSs will ensure that an airline-owned CRS will vigorously pursue the new-entrant airlines as well, or risk losing consumers and bookings to the independent CRS. Hence, if the market includes an independent CRS, then eliminating the nondiscrimination rule can, on the margin, be pro-competitive.

Policy Recommendation Regarding Mandatory Participation. In sum, so long as any major CRS is owned or controlled by one or more major carrier, contrary to position set forth in the NPRM, we believe that no clear benefits are to be derived from eliminating the mandatory participation rules, yet the costs of doing so may be substantial. Therefore, our policy recommendation is that the current rules on mandatory participation be maintained, along with the associated rules on "commercially reasonable" booking fees.

Policy Recommendation Regarding Non-Discrimination. We conclude that there may be a benefit from removing the non-discrimination rule if (1) the mandatory participation rule is kept *and* (2) the market includes one or more significant, independent CRS providers.

TABLES

TABLE ONE
AIRLINE SHARES OF U.S. ENPLANEMENTS
YEAR ENDING JUNE 2002

Carrier	Enplanement Share (percent)
American	17.9
Delta	17.4
Southwest	12.2
United	12.2
Northwest	9.3
Continental	8.7
US Airways	8.5
America West	3.1
Others	10.7
Total	100.0
Source: DOT Form 41, scheduled revenue passenger enplanements.	

TABLE TWO
AIRPORT SHARES FOR SELECTED HUB CITIES

Airport	Year	HHI	Largest Carrier		Second Largest Carrier		Third Largest Carrier	
			Name	Share (%)	Name	Share (%)	Name	Share (%)
Atlanta	2002	4,742	Delta	67.2	Airtran	13.0	American	4.7
	2000	4,256	Delta	63.4	Airtran	12.8	Continental	4.0
	1995	3,068	Delta	52.3	Airtran	13.7	Continental	6.3
Los Angeles LAX	2002	1,282	American	21.4	Southwest	17.9	United	15.0
	2000	1,442	United	24.3	Southwest	20.5	American	15.6
	1995	1,425	United	25.4	Southwest	20.4	American	11.7
Chicago O'Hare	2002	2,913	American	42.6	United	31.6	Delta	5.0
	2000	3,170	United	45.0	American	32.4	Delta	6.3
	1995	3,209	United	46.5	American	30.9	Delta	5.5
Dallas-Ft. Worth	2002	3,962	American	60.2	Delta	16.8	Northwest	3.7
	2000	3,575	American	56.6	Delta	17.3	United	4.9
	1995	4,189	American	61.6	Delta	18.6	United	3.9
Newark	2002	3,753	Continental	58.8	American	10.8	Delta	10.1
	2000	3,391	Continental	55.6	Delta	10.6	American	8.4
	1995	2,960	Continental	51.0	United	11.3	American	10.8
Detroit	2002	4,159	Northwest	62.5	Spirit	12.2	American	6.8
	2000	3,469	Northwest	57.1	Southwest	7.6	Delta	6.0
	1995	3,911	Northwest	60.8	Southwest	9.3	American	5.7
Minneapolis-St. Paul	2002	5,345	Northwest	72.5	American	5.3	Delta	5.0
	2000	4,047	Northwest	62.2	Sun Country	8.6	United	5.7
	1995	5,127	Northwest	70.7	United	7.5	American	5.2
Houston Bush	2002	5,141	Continental	70.7	American	6.7	Delta	6.1
	2000	4,757	Continental	67.9	American	6.8	Delta	5.9
	1995	4,668	Continental	66.9	American	9.4	United	6.2
Salt Lake	2002	3,444	Delta	55.0	Southwest	17.0	United	6.4
	2000	3,351	Delta	51.7	Southwest	23.6	United	8.7
	1995	3,224	Delta	46.7	Southwest	30.8	United	7.7
Cleveland	2002	3,262	Continental	53.8	Southwest	13.4	American	8.7
	2000	2,779	Continental	48.0	Southwest	16.6	US Airways	7.2
	1995	2,549	Continental	45.7	Southwest	12.7	US Airways	9.6
Memphis	2002	4,163	Northwest	61.1	Delta	18.0	American	6.7
	2000	3,320	Northwest	51.9	Delta	22.5	US Airways	5.7
	1995	3,766	Northwest	57.8	Delta	16.4	American	7.8

Source: DOT Form 41 O&D Survey.

TABLE THREE
FLIGHT AND FARE CHOICES
(THREE-WEEK NOTICE)

Flight	Number of Airlines	Number of Fares Offered	Range of Fares Offered	Number of Flights Offered
New York (JFK) to Los Angeles (LAX)	6	12	$300 to $621	21
Austin to San Jose	4	6	$301 to $321	15

For a three-week advanced notice flight, departing on the morning of Friday, March 28, 2003, and returning on Sunday, March 30, 2003. The search for flights originating at JFK was completed at 4:00 p.m., March 12, 2003, and the search for flights originating in Austin was completed at 4:10 p.m. on March 12, 2003. Searches were performed using the Travelocity service at www.travelocity.com.

FLIGHT AND FARE CHOICES
(TWO-DAY NOTICE)

Flight	Number of Airlines	Number of Fares Offered	Range of Fares Offered	Number of Flights Offered
New York (JFK) to Los Angeles (LAX)	4	8	$766 to $2,478	13
Austin to San Jose	5	10	$1,067 to $1,698	16

For a two-day advanced notice flight, departing on the morning of Friday, March 14, 2003, and returning on Sunday, March 16, 2003. The search for flights originating at JFK was completed at 3:46 p.m., March 12, 2003, and the search for flights originating in Austin was completed at 3:50 p.m. on March 12, 2003. Searches were performed using the Travelocity service at www.travelocity.com.

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TABLE FOUR

CRS BOOKINGS AS A PERCENTAGE OF

TOTAL BOOKINGS

	1983 /1	1998	1999	2000	2001	2002
Sabre	42.8	28.7	29.0	29.5	28.2	24.6
Worldspan	12.2 /2	10.0	11.3	12.2	12.8	12.9
Galileo/Apollo	27.1	18.6	17.0	15.2	12.7	11.1
Amadeus/System One	4.1	7.1	6.0	4.6	5.1	4.3
Carrier Direct	12.0	35.5	36.6	38.6	41.3	47.1
Total	98.1	100.0	100.0	100.0	100.0	100.0

Sources: Except where noted, data source is Sabre.

Notes:

/1 Source is 49 Fed. Reg. 11649 (March 27, 1984).

/2 Represents the combined shares of DATAS II and PARS, predecessor CRSs to Worldspan.

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TABLE FIVE

BOOKINGS SHARES AMONG CRS PROVIDERS

(PERCENT)

	1983 /1	1998	1999	2000	2001	2002
Sabre	48.6	44.0	45.3	47.3	47.1	45.5
Worldspan	13.9 /2	16.6	21.2	21.2	23.4	26.3
Galileo/Apollo	30.8	27.4	23.3	23.3	20.1	19.6
Amadeus/System One	4.6	12.0	8.1	8.1	9.4	8.7
Total	97.9	100.0	100.0	100.0	100.0	100.0

Sources: Except where noted, data source is Sabre.

Notes:

/1 Source: 49 Fed. Reg. 11649 (March 27, 1984).

/2 Represents the combined shares of DATAS II and PARS, predecessor CRSs to Worldspan.

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TABLE SIX

NORTH AMERICAN BOOKING SHARES OF

TOP ONLINE AGENCIES

	Online Bookings as a Percent of Total Bookings (%)			Bookings Share Among Online Agencies (%)		
	2000	2001	2002	2000	2001	2002
Travelocity	2.0	2.9	3.1	41.4	32.7	28.5
Expedia	1.3	2.2	3.1	27.6	24.9	28.7
Orbitz	0.0	0.9	2.3	0.0	10.2	21.3
Other	1.5	2.9	2.3	31.0	32.2	21.5
Total	4.8	8.9	10.9	100.0	100.0	100.0

Source: Sabre. Bookings on online agencies outside the U.S. are excluded.

TABLE SEVEN
SABRE'S BOOKING SHARES
BY TRAVEL AGENCIES

Subscriber Travel Agency	Percentage of Sabre's Total Bookings
Top 10 Total	31.6
Top 20 Total	36.6
Top 100 Total	49.6
Source: Sabre	

TABLE EIGHT
TICKET DISTRIBUTION CHANNEL SHARES
(PERCENT)

North America	1983 /1	1987 /2	1998	1999	2000	2001	2002
Travel Agency Breakdown							
Online	0.0	0.0	0.7	2.7	4.8	8.9	10.9
Corporate	NA	NA	0.0	0.1	0.4	1.0	1.6
Brick and Mortar	NA	NA	63.8	60.5	56.2	48.8	40.4
Total Agency Bookings	88.0	87.4	64.5	63.4	61.4	58.8	52.9
Carrier Direct Breakdown							
Offline / Call Center /3	12.0	12.6	NA	34.1	33.0	31.3	31.9
Online /3	0.0	0.0	NA	2.5	5.6	9.9	14.0
Total Carrier Direct Bookings /5	12.0	12.6	35.5	36.6	38.6	41.3	47.1

Source: Except where noted, data source is Sabre. (2002 is forecast)

/1 Source is 49 Fed. Reg. 11649 (Mar. 27, 1984).

/2 Source is 57 Fed. Reg. 43782 (Sept. 22, 1992).

TABLE NINE
PERCENTAGE OF REVENUES BOOKED ONLINE
(JANUARY 2002 TO JUNE 2002)

Airline	Percentage of Total Revenues Booked Online
Southwest	46
Delta	16
American	13
US Airways	24
United	11
Northwest	16
Continental	14
America West	43
Alaska	28
Source: PhoCusWright Report.	

TABLE TEN
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MARKET FOR AIR-TRAVEL INFORMATION
HERFINDAHL-HIRSCHMAN INDEX
(2002)

Provider	Share of Total US Bookings	Square Share
CRS/Travel Agency Channe[/1]		
Sabre	24.6	605.2
Worldspan	12.9	166.4
Galileo	11.1	123.2
Amadeus	4.3	18.5
Carrier Direct Channel[2]		
American	8.4	71.1
Delta	8.2	67.2
Southwest	5.7	33.0
United	5.7	33.0
Northwest	4.4	19.2
Continental	44.1	16.8
US Airways	4.0	16.0
America West	1.5	2.1
Others	5.0	25.4
	HHI	1,197

[/1] See Table Four.
[/1] As shown in Table Four, the carrier-direct channel accounted for 47.1 percent of U.S. bookings in 2002. Booking shares for individual carriers are assigned using airline shares of U.S. enplanements (see Table One).

TABLE ELEVEN
CRS CONTRACT LENGTH
REPORTED BY ASTA AGENCIES

Percent of Responding Agencies					
Contract Length	1998	1999	2000	2001	2002
3 Years	9.3	10.7	26.4	39.8	39.2
5 Years	84.7	81.7	64.9	51.5	47.2
Other /1	5.9	7.9	8.7	8.7	13.6

Source: ASTA, Agency Automation 2002, p. 35 (October 2002).
/1 Virtually all respondents choosing the "other" option reported contract lengths of less than three years.

Note: An examination of the expiration dates of Sabre's subscriber contracts reveals that as of December 2002, approximately 18 percent of Sabre's subscriber contracts were due to expire within one year. In addition, approximately 23 percent of Sabre's subscriber contracts were due to expire between one to two years. Thus, as of December 2002, approximately 41 percent of Sabre's subscriber contracts were due to expire within two years.[93]

[93] Source: Sabre.

TABLE TWELVE
PERCENT OF TRAVEL AGENCIES SURVEYED
PLANNING TO SEEK COMPETING BIDS
ONCE CONTRACT EXPIRES

	Will Seek Competing Bid (percent)	Will Not Seek Competing Bid (percent)
Galileo	78.6	21.4
Sabre	72.7	27.3
Amadeus	54.2	45.8
Worldspan	90.7	9.3
Overall	*75.6*	*24.4*
Source: ASTA, Agency Automation 2002, p. 49 (October 2002).		

TABLE THIRTEEN
SABRE'S BOOKING FEES

Year	Average Booking Fees ($ 1993) /1
1993	1.00
1994	1.04
1995	1.08
1996	1.10
1997	1.14
1998	1.21
1999	1.23
2000	1.25
2001	1.35
2002	1.35

Sources:
Sabre Holding Corporation and Consumer Price Index – All Urban Consumers, Series Id. CUUR0000SA0, Bureau of Labor Statistics, United States Department of Labor.

Notes:
/1 Average booking fee equals annual airline booking revenues divided by annual airline bookings.