

July 2003

AIRLINE TICKETING

Impact of Changes in the Airline Ticket Distribution Industry



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Highlights of [GAO-03-749](#), a report to congressional requesters

Why GAO Did This Study

In 2002, when major U.S. airlines posted net operating losses of almost \$10 billion, they paid over \$7 billion to distribute tickets to consumers. Of these total distribution expenses, airlines paid hundreds of millions of dollars in booking fees to global distribution systems—the companies who package airline flight schedule and fare information so that travel agents can query it to “book” (i.e., reserve and purchase) flights for consumers. Each time a consumer purchases an airline ticket through a travel agent, the global distribution system used by the travel agent charges the airline a set booking fee. Concerns have been raised that the global distribution systems may exercise market power over the airlines because most carriers are still largely dependent on each of the global distribution systems for distributing tickets to different travel agents and consumers and therefore must subscribe and pay fees to each. Market power would allow global distribution systems to charge high, noncompetitive fees to airlines, costs that may be passed on to consumers.

GAO was asked to examine changes in the airline ticket distribution industry since the late 1990s and the effects on airlines, the impact of these changes on travel agents and consumers, and what the relationship between global distribution systems’ booking fees and related costs suggest about the use of market power.

www.gao.gov/cgi-bin/getrpt?GAO-03-749.

To view the full product, including the scope and methodology, click on the link above. For more information, contact JayEtta Z. Hecker, 202-512-2834, HeckerJ@gao.gov.

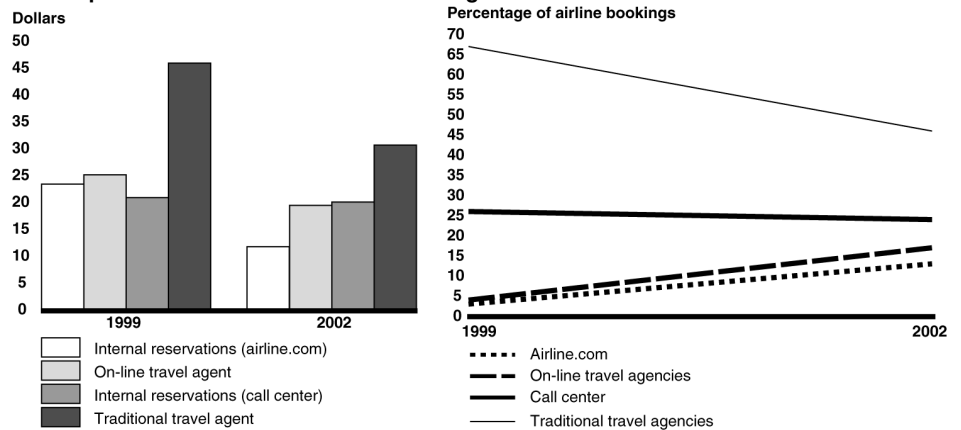
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What GAO Found

Since the mid-1990s, two major changes occurred in the airline ticket distribution industry, and these have produced cost savings for some major U.S. airlines. First, airlines developed less expensive Internet ticketing sites that bypass global distribution systems and their fees and encouraged passengers to book via Internet sites. Between 1999 and 2002, on average, the percentage of tickets booked on-line, including airline-owned Websites and on-line travel agencies, grew from 7 percent to 30 percent. Second, in a related effort to trim costs, airlines cut the commissions they traditionally paid to travel agencies. However, these changes have not eliminated airline dependence on global distribution systems.

Less expensive Internet-based airline bookings have increased over time



Source: GAO analysis of data provided by major U.S. airlines.

These changes have had mixed effects on travel agents and consumers. Very large travel agencies (those with more than \$50 million in annual air travel sales revenue) appear to have benefited from volume-based incentive payments from airlines and global distribution systems, while smaller travel agencies have closed or lost business, especially to on-line travel Websites. Consumers who use the Internet have benefited from lower internet-only fares. Travelers who do not buy airline tickets on line may be at a disadvantage in not having access to these fares.

Because we lacked access to proprietary company information, we could not determine the precise relationship between global distribution system booking fees and related costs, and thus could reach no conclusions about potential exercise of market power by global distribution systems in the airline ticket distribution industry. Since 1996, booking fees and some costs related to the booking function—computing costs and travel agent incentive payments—both increased. However, we could not obtain data on all expenses related to the booking function, and thus could not accurately compare these costs to booking fees. DOT provided us with technical comments, which we incorporated as appropriate.

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Abbreviations

CRS	Computer Reservation System
DOJ	Department of Justice
DOT	Department of Transportation
GAO	General Accounting Office
GDS	Global Distribution System
NCECIC	National Commission to Ensure Consumer Information and Choice in the Airline Industry

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United States General Accounting Office
Washington, D.C. 20548

July 31, 2003

The Honorable Mike DeWine
Chairman, Subcommittee on Antitrust, Competition
Policy and Consumer Rights
Committee on the Judiciary
United States Senate

The Honorable Herbert Kohl
Ranking Minority Member, Subcommittee on Antitrust,
Competition Policy and Consumer Rights
Committee on the Judiciary
United States Senate

In 2002, when major U.S. airlines posted net operating losses of almost \$10 billion, they paid approximately \$7.3 billion to distribute tickets to consumers. Of these total distribution expenses, airlines paid hundreds of millions of dollars in booking fees to global distribution systems (GDS)—the companies whose computer systems display airline flight schedule and fare information so that travel agents can query it to “book” (i.e., reserve and purchase) flights for consumers. Although distribution costs represent relatively small amounts of an airline’s total costs (labor and fuel represent nearly half an airline’s expenses), ensuring a competitive distribution system is important to the industry because it represents the link between airlines and the traveling public. In the United States, three domestic global distribution systems dominate the industry. Traditionally, each time a consumer purchases an airline ticket through a travel agent, the global distribution system used by the travel agent charges the airline a set booking fee. Concerns have been raised that the global distribution systems may exercise market power over the airlines because most major carriers are still largely dependent on each of the global distribution systems for distributing tickets to different travel agencies and consumers. Market power, which can arise where competition is lacking, may result in high, noncompetitive fees charged for services or goods. In this case, market power may be indicated by booking fees that bear little relation to booking costs.

The precursors to global distribution systems, called computer reservation systems (CRS), were owned by the airlines. Since 1984, rules enforced by the Department of Transportation (DOT) have regulated the conduct of these systems to prevent airline owners of computer reservation systems from using their influence to benefit themselves by reducing competition

from other airlines, which could ultimately harm consumers. DOT regulations, commonly referred to as the “CRS rules,” were developed to prevent airlines that owned a computer reservation system from biasing the information on flights and fares that consumers received in order to impede competition. Effectively, the rules, which apply to computer reservation systems and global distribution systems, ended bias in the computer screen display of information that was used by travel agents to book tickets and now require major U.S. airlines to "participate" equally in each global distribution system. They also require computer reservation systems to charge airlines similar booking fees for similar levels of service, which limited airlines’ ability to negotiate over booking fees. As of July 2003, when most airlines have sold off their shares in global distribution systems and the global distribution systems have become independent entities, DOT was reviewing the CRS Rules to determine if and how they should be revised. Many parties provided comments with differing opinions to DOT. Department of Justice officials stated that the global distribution systems have had and continue to have market power over the airlines.

In light of the airlines’ dependence on the global distribution systems during this time of unprecedented financial losses, and in the context of the ongoing debate on the CRS rules, you asked us to examine issues related to the airline ticket distribution industry. As agreed with your office, this report focuses on the following questions:

- What have been major changes in the airline ticket distribution industry since the late 1990s, and how did these changes affect airlines?
- How have these changes in the airline ticket distribution industry affected travel agents and consumers?
- What does the relationship between global distribution systems’ booking fees and booking-related costs suggest about the presence and use of market power?

To determine how the airline ticket distribution industry has changed and the effects on airlines since the late 1990s, we analyzed aggregated proprietary industry booking trend and cost data; examined DOT documents; and interviewed officials with the global distribution systems, several major airlines, and other industry experts. To describe how changes in the airline ticket distribution industry have affected travel agents and consumers, we analyzed travel agent and consumer ticketing fee data; reviewed major airline and various travel agency consumer fee policies;

and interviewed travel agents, industry group representatives, and DOT officials. To determine what the relationship between global distribution systems' booking fees and related costs indicated about the presence and use of market power, we analyzed and compared data on global distribution system operating cost data, certain booking-related costs, and booking fees. To protect the confidential proprietary nature of individual global distribution system and airline information, we reported all costs and fees in terms of averages calculated from the companies that provided data. We limited the scope of this review to the three major U.S. global distribution systems—Galileo, Sabre, and Worldspan. These three systems handle 92 percent of the U.S. bookings. We were limited in our review because we did not have full access to proprietary airline, global distribution system, and travel agent data. However, we reviewed the comments submitted to DOT as part of its CRS rulemaking, including those of the Department of Justice's (DOJ) Antitrust Division—government antitrust experts who conducted a market structure analysis of the ticket distribution system. We also discussed those comments with officials from the Antitrust Division. Because of a lack of historical data, we limited our review to the 4 years covering the period 1999 through 2002. Appendix I contains additional information on the objectives, scope, and methodology of this review.

Results in Brief

Two major changes have occurred in the airline ticket distribution industry as airlines began to sell their shares in the global distribution systems in the mid-1990s, and these changes have helped airlines to cut distribution costs.

- First, airlines have created and provided incentives to expand the use of various types of Internet-based applications that can bypass global distribution systems and their associated booking fees. These include airline Websites (e.g., www.continental.com), which bypass global distribution systems by using the airlines' own internal reservation systems, and Orbitz, a travel technology company developed by a consortium of large U.S. airlines that has recently developed technology that allows it to book tickets without using a global distribution system. Other Internet-based travel agencies (e.g., Expedia, Priceline, or Travelocity—a subsidiary of one of the global distribution systems) use global distribution systems to book tickets but nevertheless cost airlines less than traditional travel agencies. Through various incentives, airlines have encouraged some passengers to book a growing portion of tickets on less costly Internet-based booking sites.

-
- Second, in another effort to cut distribution costs, airlines cut their sales commissions to travel agents. In response to overtures by the large travel agencies, on whom global distribution systems depend to reach large numbers of consumers, global distribution systems subsequently increased sales incentive payments to travel agencies. At the same time, both large and small travel agencies began charging consumers ticketing fees. Airlines, however, continue to provide commission payments, particularly to the largest travel agencies—both traditional and Internet-based.

These changes have helped major airlines to reduce their total distribution costs by 25.8 percent, from 1999 to 2002, from an average of \$732.9 million to \$543.6 million, or 43.6 percent on a per booking basis. However, airlines continue to depend on global distribution systems to reach consumers, because over 60 percent of bookings (including the majority of all traditional travel agency bookings and some Internet-based bookings), and nearly all the relatively high yield business traffic, continue to be processed by global distribution systems. Furthermore, airlines continue to need to subscribe to each of the global distribution systems, and no new entry has occurred since the enactment of the rules in the 1980s to reduce the market power of each global distribution system.

These changes in the airline ticket distribution industry—the growing significance of the Internet and shifts in the payments to travel agents—appear to have benefited very large travel agencies (those with more than \$50 million in annual air travel sales revenue) and consumers who use the Internet. Very large travel agencies—whose total annual sales have almost doubled since 1995—appear to have benefited from a combination of increasing global distribution system incentive payments, some continued airline sales commission payments, and customer service fees. In contrast, total annual sales at small travel agencies (those with less than \$2 million in annual air travel sales revenue) decreased by 32 percent since 1995, driven in large part by a shift toward on-line bookings by leisure consumers. Consumers who use the Internet may benefit from being able to independently access and compare airline ticket pricing and scheduling information, as well as from being able to access special low fares available only on the Internet. Consumers who do not use the Internet may be at a disadvantage in not having access to Internet-only fares and in having to pay relatively higher travel agent service fees. But they may have more flexibility regarding schedule changes, and they may benefit from travel agents' industry expertise.

Because we lacked access to proprietary company information, we could not determine whether the relationship between global distribution system booking fees and related costs suggest that global distribution systems exert market power in the airline ticket distribution industry. In response to your request, we found that global distribution system booking fees rose by nearly 31 percent between 1996 and 2001. Of total global distribution system costs, two costs available to us that relate specifically to the booking function—computing costs (i.e., total data center operating costs) and travel agency incentive payments—have increased during the same time period. The precise rate of increase for computing costs is difficult to determine because global distribution systems do not report the data in the same way, but the incentive payments to travel agencies by global distribution systems is measurable and it has increased by an average of over 500 percent. However, we could not obtain data on all expenses related to the booking function (e.g., software development costs), and thus could not accurately compare total booking costs to booking fees. Consequently, we are not able to independently assess whether the booking fees are indicative of the existence and use of market power by global distribution systems over airlines. On June 9, 2003, the Department of Justice, based on its antitrust analysis of the industry, offered conclusions to DOT about the existence of market power in the industry as part of its ongoing review of the CRS rules. Justice concluded that despite recent growth of Internet ticket distribution, the GDSs continue to have market power over the airlines and the CRS rules do not prevent them from charging airlines fees above competitive levels. DOT and DOJ provided us with technical comments, which we incorporated as appropriate.

Background

An airline “booking” occurs when a passenger reserves and purchases a seat for a trip. In 2002 in the United States, an estimated 255 million passengers flew more than 611 million flight segments (e.g., a traveler who flew between Baltimore, Maryland, and Portland, Oregon, who connected over Chicago both outbound and inbound represents a single passenger that flew four flight segments). Information included in the booking consists of the traveler’s name; an address; price and billing information; the full itinerary origins, destinations, and possible connecting airport with flight numbers and times; and perhaps other information as well, such as loyalty program (i.e., frequent flyer) information, including program status or seat and meal preferences. When a booking is entered in a computer system by a traditional travel agent, it is created in a GDS. The GDS-generated booking is then sent to the airline’s internal reservation system.

The GDS charges an airline a “booking fee” based on the total number of flight segments in the traveler’s itinerary.¹ For example, if a booking fee is \$4 per segment and a passenger reserves and purchases an itinerary that consists of four flight segments (an outbound flight that connects over an airline’s hub to the ultimate destination and two similar return flights), the airline will be charged approximately \$16 in booking fees. Changes made to the booking may cost extra for the airline. For example, if a passenger changes the day of his return flight, the airline may be refunded all but a fraction of its booking fees for those segments, and charged again for the booking of the new segments.²

Sometimes, a passenger may book an itinerary with an airline through a traditional travel agent, but may choose not to pay for the ticket pending a final decision on the trip. Such cases are called “speculative” or “passive bookings.” In an effort to maintain the booking as a service to the potential customer, a travel agent may continue to cancel and re-book the itinerary.³ Each cancellation and re-booking costs the airline (sometimes cancellations and re-bookings result in “churn”). The final cost to the airline is called a “net booking fee.”⁴

The precursors to GDSs, CRSs, first automated the selling of airline seats and the tracking of flight and schedule information for use by airline employees in the late 1960s. Beginning in the mid-1970s, these systems were offered to travel agencies. These CRSs were owned by (i.e., vertically integrated with) the airlines. American Airlines and IBM jointly developed a system called Sabre (Semi-Automatic Business Research Environment) to automate American’s bookings. United Airlines and TWA followed with

¹Travel agents and consumers shop using a GDS without charge. Much data processing occurs to support this shopping process, which may or may not result in a booking.

²Airlines may be refunded for a cancelled segment by all but 40 cents of the booking fee. Using the above example (four flight segments for \$16), a change to the passenger’s return date (i.e., a change to two segments) would finally cost the airline \$16.80.

³The inventory has already been deducted from the carrier host system, so the travel agent enters the flight segment data into the CRS using transaction codes that may not generate a message to the carrier advising of the sale. The travel agent must then notify the carrier either by phone or by sending a GDS message that they now have control of the booking.

⁴Airlines can avoid churn by requiring payment at the time of the original booking, but some airlines make a business decision to allow passive bookings with traditional travel agents in order to potentially secure the passenger’s business.

Apollo and PARS, respectively.⁵ Delta and Eastern followed with DATAS II and System One, respectively. These CRSs replaced manual booking systems, and thus allowed the airlines to quickly and reliably process a large number of transactions. By extending use of the systems to travel agencies, airlines were able to reduce expensive telephone calls from travel agencies to airline reservation offices and were able to offer real time access to fares and inventory to its agency partners, improving the marketability of their services.

Under airline ownership, certain CRS practices created competitive disadvantages for some carriers and often did not expose consumers to all available carrier options and prices. Before the industry was deregulated in 1978, interline travel—a practice in which passengers fly on more than one airline to reach a destination—was common.⁶ To serve passenger needs, travel agencies also needed CRSs to provide information and booking capabilities on all airlines. However, CRSs did not treat every airline equally.

- An airline with its own CRS (“owner airline”) did not pay fees for booking passengers through that CRS, and it displayed schedule information in a way that favored its own flights at the expense of these other airlines—even if other airlines offered more direct service between two cities at less cost to the traveler. Typically, an owner airline would market its CRS to travel agencies in cities where it flew a significant number of flights.
- In the early 1980s, to expand CRS-travel agent market share in cities where they provided limited air service, owner-airlines developed “co-host” programs with other airlines that had a significant presence in targeted cities. In exchange for discounts on fees for bookings made on

⁵By 1988, five CRSs were in use by travel agents: Sabre, owned by American Airlines; Apollo, principally owned by United with a consortium of other airlines; PARS, owned by TWA and Northwest; System One, owned by Texas Air Corp., which acquired Eastern Airlines and its system; and DATAS II, owned by Delta Air Lines. Apollo since became Galileo. PARS and DATAS II since became Worldspan. System One was acquired by Amadeus, the largest foreign-based GDS. Since the mid-1990s, all major airlines have fully sold their interest in the GDSs.

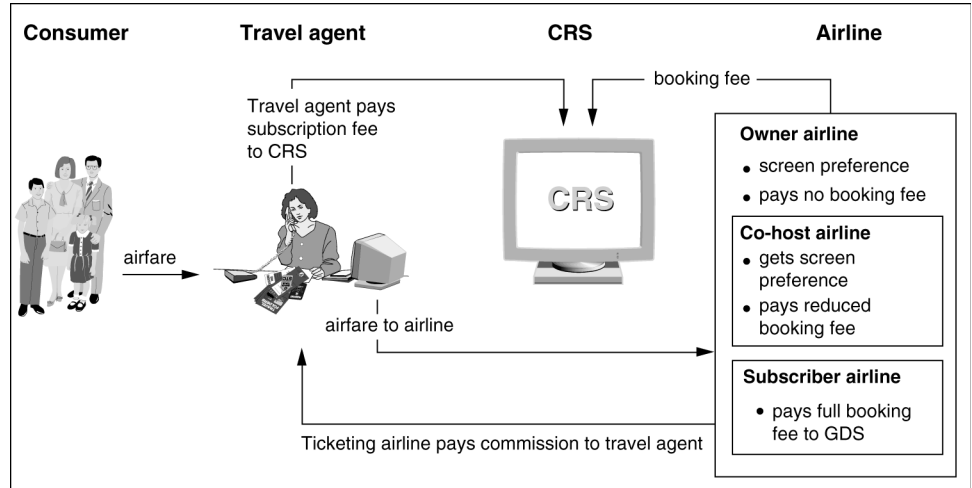
⁶Interline agreements between airlines provide for the mutual acceptance by the participating airlines of passenger tickets, baggage checks, and cargo waybills, as well as establish uniform procedures in these areas. These agreements are common, but not universal, among the major U.S. airlines. Interline agreements typically do not include reciprocal frequent flyer and airport lounge rights.

that CRS and for more prominent display of its flight information on the CRS computer screen, the co-host airline would market the owner airline's CRS to its local travel agencies.

- Other airlines that were not co-hosts (“subscriber airlines”) would pay higher fees for any booking made on that CRS and continued to be disadvantaged by a bias in the display of their available flights.

In essence, airline owners of CRSs used them to gain an unfair advantage in the marketplace, and struck deals with certain airlines giving them competitive advantages over other airlines. Figure 1 illustrates the typical financial transactions that took place among airlines, CRSs, travel agencies, and consumers prior to the enactment of the CRS rules.

Figure 1: Summary of Historic Airline Ticket Distribution Relationships Prior to the CRS Rules



Source: GAO analysis.

Owner airlines had an incentive to service as many travel agencies as possible in order to gain greater booking share. This, in part, is because CRSs benefit from economies of scale: CRS profits increase as passenger traffic and bookings increase, and both of those depend on access to more travel agents. While CRS market positions tend to be strongest in specific geographic areas consistent with their airline owners' markets (and any markets they were able to negotiate from nonowner, or co-host, airlines),

each U.S. GDS has developed a national, and subsequently, global footprint. In addition, owner airlines also recognized that travel agents' familiarity and comfort with their CRSs produced something of a halo effect that gave owner airlines a greater share of bookings. While airlines paid commissions to travel agencies based on the value of the purchased tickets, carriers also encouraged travel agents to make additional passenger bookings by paying commission "overrides" to travel agencies for surpassing set sales goals.⁷

Though three domestic CRSs existed, an individual travel agent office typically relied on only one system. This was due in part to the multiyear, often exclusive, contracts under which they historically operated with CRSs. Using more than one system was also inefficient from the standpoint of most travel agents.

These structural relationships produced two major effects:

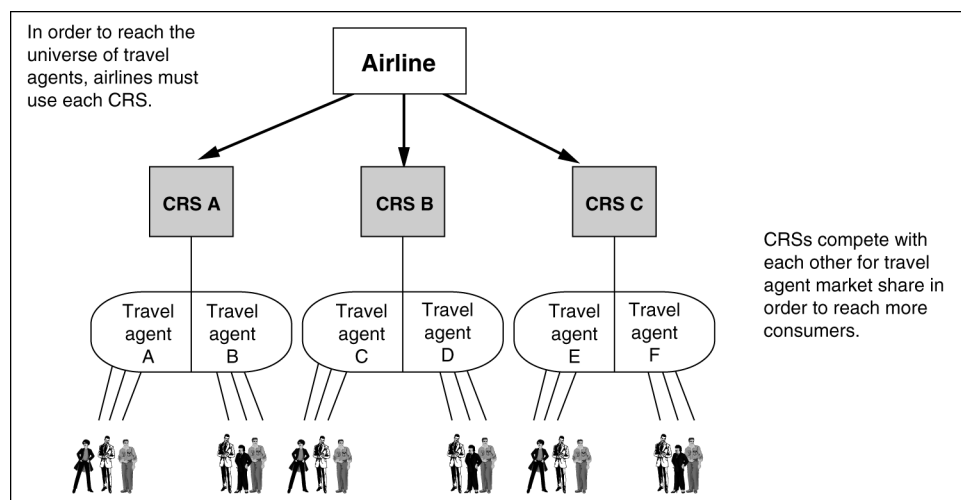
- Because airlines—dependent on the systems—paid the booking fees, rather than the other users of the systems (travel agents and, ultimately, consumers), there was no competitive pressure constraining CRS booking costs.
- Airlines had little choice except to participate in each CRS, and CRSs did not have to compete for airline participants. As DOJ stated in comments submitted to DOT in 1989, each CRS constituted a separate market for air carriers because of the near-exclusive relationship with separate groups of travel agencies, and each is a monopolist with market power over carriers that want to sell tickets in areas where the CRS has a significant number of travel agencies. Thus, unless an airline was willing to forego access to those travel agencies and the consumers they served, it needed to participate in every CRS.

To illustrate, consider Sabre's relationship with American Airlines, and Galileo's relationship with United Airlines. Because American has significant operations in the Dallas/Ft. Worth area, many travel agencies in Texas historically subscribed to Sabre, while United has similarly significant operations in Chicago and many travel agencies there likely were Galileo users. However, because American wanted to be available to travel agencies located in United's traditional territory that subscribe to

⁷An override commission is a payment made based on the travel agency meeting a set goal of sales.

Galileo, it had to use Galileo as a CRS, as with other GDSs. Similarly, United wanted to be available to travel agencies in what was historically dominated by American in Texas and therefore had to be available on Sabre. Figure 2 illustrates the exclusive relationships that CRSs had with travel agencies, and the airlines' dependence on each CRS to reach the most number of travel agencies.

Figure 2: CRS Relationships with Travel Agencies and Airlines



Source: GAO analysis.

Prior to the enactment of the CRS rules, consumers only paid airfare, regardless of the complexity of the itinerary. Presumably, those airfares reflected the airlines' total costs, including overhead expenses associated with ticket distribution.

In 1984, the Civil Aeronautics Board (CAB), in one of its last official acts, adopted CRS rules to protect consumers and help ensure fair competition among airlines. The goal of these rules was to dissipate or constrain the power of the airlines and their CRSs to manipulate the competition for passenger traffic. DOT inherited the CAB's duties, and in 1992 found that the rules were still necessary. DOT concluded that without them, CRS owners could use their control of the systems to prejudice airline

competition, and the systems could bias their displays of airline services.⁸ Three main requirements in the CRS rules attempt to ensure that each owner airline and its CRS would treat other airlines equitably:

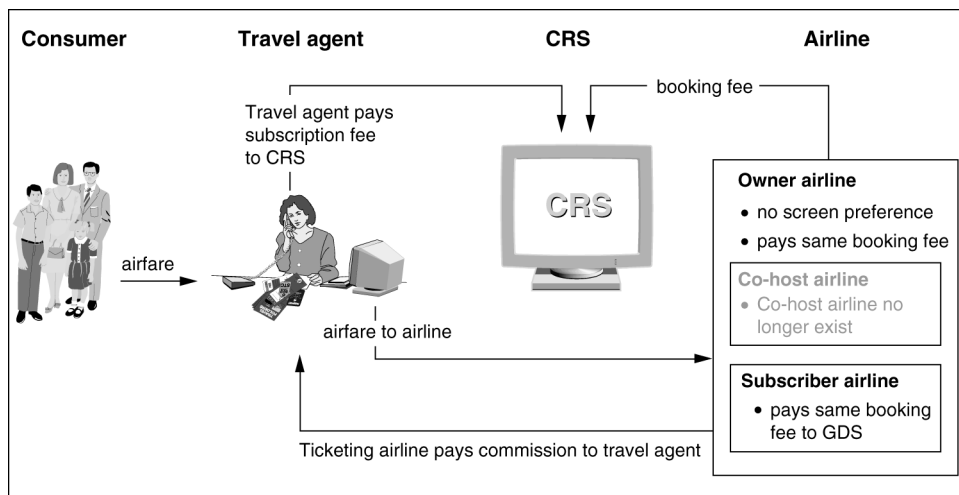
- Screens displaying flight information are not to favor one airline over another (“unbiased screens”);
- For the same level of service, prices for bookings must be the same for all airlines, including owner airlines, eliminating differences such as co-host or subscriber airlines (“price nondiscrimination”); and
- The “mandatory participation” rule requires airlines with a 5 percent ownership interest or more in a CRS (“owner airlines”) to participate in competing systems at the same level at which it participates in its own system.⁹

Figure 3 illustrates how the airline ticket distribution industry changed after the implementation of the CRS rules.

⁸57 Fed. Reg. 43780, September 22, 1992.

⁹The mandatory participation rule does not preclude nonowner airlines from participating in CRSs to varying extents. Fees paid per booking depend on an airline’s participation level. For instance, according to information from Sabre, its simplest participation level—“Basic Booking Request”—costs an airline \$2.12 per segment. Sabre’s highest level of participation—“Direct Connect Availability”—costs an airline \$4.39 per segment.

Figure 3: Summary of Historic Airline Ticket Distribution Relationships under the CRS Rules



Source: GAO analysis.

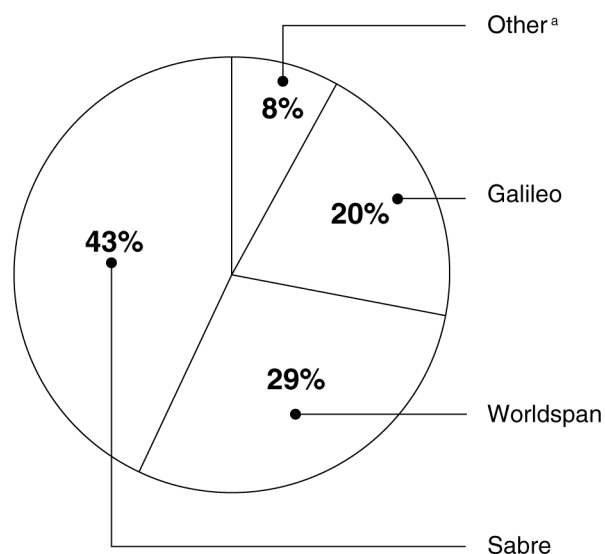
DOT's 1992 revisions to the CRS rules included a sunset date of December 31, 1997, which DOT subsequently extended to January 2004. DOT is currently reviewing additional possible revisions to the CRS rules.

As CRSs evolved as corporate entities, they added other lines of business to the original airline ticket booking function. They currently book not only airline reservations, but also hotel, rental car, train, tour, and cruise reservations. CRSs also sell other professional services to airlines, such as software and Information Technology services for personnel and aircraft scheduling, and for baggage handling. CRSs provide outsourced internal reservation systems for airlines, as well. In the expansion of their activities they became known as GDSs, reflective of the increasingly international and diverse nature of travel they encompassed.

Since the mid-1990s, U.S. airline owners have sold their shares in their GDS businesses. Three domestic GDSs have evolved to dominate the U.S. travel agent market: Sabre, Galileo, and Worldspan. Sabre became a separate legal entity of AMR Corp. (American Airlines' parent company) in July of 1996, followed by an initial public offering of Sabre in October 1996; it has since been fully divested by AMR Corp. In 1997, Galileo International became a publicly traded company, and in 2001 became a subsidiary of Cendant Corp. Worldspan was sold in June 2003 to private investors. These

changes ended the vertical integration of these airlines and GDSs. Figure 4 illustrates the GDS shares for all U.S. domestic bookings that relied on a GDS in 2002.¹⁰

Figure 4: U.S. Domestic Booking Share of Global Distribution Systems Bookings, 2002



Source: GAO analysis of data from GDSs.

Note: All figures are approximations.

^a“Other” refers to all internationally based GDSs, such as Amadeus, Abacus, Axess, Infini, and Topas. Amadeus’ booking share is about 8 percent, while the remaining international GDSs comprise less than 1 percent of total U.S. bookings.

¹⁰The scope of this report is focused on domestic global distribution companies and we therefore do not include foreign companies, such as Europe-based Amadeus, in our review. For more information on the scope of our review, see app. I.

Major Changes Occurred in the Use of the Internet and Travel Agent Compensation in the Airline Ticket Distribution Industry

Since the airlines began selling their shares in the GDSs in the mid-1990s, the ticket distribution system has undergone two major changes. These changes have helped airlines, faced with generally high operating expenses, cut distribution costs. First, airlines and others have increasingly sold and processed tickets through Internet-based applications (e.g., airline Websites, on-line travel sites), some of which bypass GDSs. These distribution methods are less expensive to the airlines than traditional travel agencies. Second, airlines have reduced commission payments to travel agents. At the same time, in response to overtures by large travel agencies, GDSs partially offset that reduction in airline commission payments by significantly increasing incentive payments to travel agents, on whom they depend to reach a large number of consumers.¹¹ In part, these changes have enabled major airlines to reduce their total distribution costs by 25.8 percent from an average \$732.9 million in 1999 to \$543.6 million in 2002, or 43.6 percent on a per booking basis.¹² However, these changes have not eliminated the airlines' dependence on the GDSs for the selling of air tickets. Airlines continue to need to subscribe to each GDS to reach the universe of travel agents and potential consumers.

Internet Sites That Cost Airlines Less Are Increasingly Used to Book Tickets, Some without the Use of Global Distribution Systems

Airlines have developed new Internet-based ticket booking processes that bypass GDSs and their associated booking fees. Others have developed Internet-based travel agencies that use GDSs to book tickets but whose bookings still cost airlines less than tickets booked through traditional travel agents. An increasing percentage of tickets are booked through the Internet, and an increasing percentage of bookings are made without the use of GDSs.

Airlines are Using New Processes to Bypass the GDSs and their Fees

The airlines have used the Internet to change the way bookings are processed by creating ways to work around the GDSs and their booking fees. Airlines have developed two basic ways to use the Internet to avoid the cost burden associated with standard GDS booking fees.

First, airlines have developed their own Websites (e.g., www.continental.com) that allow consumers to reserve and book seats

¹¹We do not have access to the individual contracts between various travel agents and airlines. Therefore, these descriptions are general and may not be the case for all airlines.

¹²Examples of other airline cost-cutting efforts include a reduction of labor costs.

directly with airlines. Bookings made through these sites do not use a GDS booking function, and therefore do not incur booking fees. Rather, airlines maintain pricing, flight, and seat availability in their own internal reservation systems. For example, a booking made through Continental's Website is processed by a data vendor that is not a GDS. Bookings made when a consumer telephones an airline's "call center" (e.g., via a toll-free number such as Continental's 1-800-523-FARE) are also routed through that same vendor.¹³ But, unlike call centers that rely on personnel to process bookings, airline proprietary on-line site bookings are processed electronically and therefore incur lower labor costs.

Second, five major U.S. airlines collectively underwrote the development of a travel technology company called Orbitz. Because consumers can go to the Orbitz Website (www.orbitz.com) to query fare and schedule information for most major airlines as well as to book and purchase tickets, it performs similar functions as a travel agent. Orbitz now has two methods by which it books tickets, one of which uses a GDS and one of which bypasses GDSs and their associated booking fees.

Originally, and in many cases still, Orbitz uses the Worldspan GDS to obtain airline availability data and to place the booking, and airlines pay booking fees to Worldspan for tickets booked in this manner. Orbitz receives volume-based rebates from Worldspan, flat transaction fees (approximately \$5.34 charter associate fee or \$10 per ticket from noncharter associates) from airlines, and it charges fees to consumers (\$6 per ticket).

¹³Some airlines' internal reservation systems are "hosted" by various GDS' data processing systems. Reservations and other transactions initiated by the hosted airline's employees and the airline's branded Websites (e.g., AA.com) are covered by a separate technology services agreement different from the agreement that covers the distribution of the airline's inventory to the GDS agency subscribers (i.e., Participating Carrier Agreement). The compensation to the GDS for such technology services is separate from the booking fees described earlier and may take several forms, including a fee per transaction, a fee per computer message and a fee per information technology capacity unit utilized and also include separate charges for software development services.

Through Orbitz, however, some airlines can generate significant cost savings relative to traditional and on-line travel agent booking methods.¹⁴ “Charter airlines” have negotiated special arrangements with Orbitz, under which they receive rebates on a portion of the booking fee.¹⁵ According to Orbitz officials, these rebates generally save charter airlines about \$3 of the approximate \$16 paid in booking fees per ticket compared to bookings made through traditional travel agencies. Airlines that are not charter members of Orbitz pay the full Worldspan booking fee. These arrangements contrast with the CRS rules requirement of price nondiscrimination and mandatory participation, which have limited carriers’ ability to negotiate reduced booking fees with GDSs. Airlines are allowed to negotiate special arrangements with Orbitz because DOT has not defined Orbitz as a CRS, and thus did not extend the application of the CRS rules to cover Orbitz.

Recently, Orbitz, with airline cooperation, has also developed technology that enables it to book tickets by directly accessing each participating airlines’ internal reservation system, bypassing the GDS and its booking fees. This technology, which (unlike the technology used to access an airline’s internal reservation system) can query and get information from multiple airlines, functions similarly to the technology used by GDSs. According to Orbitz officials, its new technology, which is called “Supplier Link,” could result in participating airlines saving about \$12 of the typical

¹⁴When airline flights are booked through Orbitz, airlines pay booking fees to GDSs, commissions or transaction fees to Orbitz, and other distribution costs. Airlines’ costs can vary. For airlines that enter into agreements with Orbitz (i.e., charter airlines), Orbitz rebates the net booking fee by 60 percent of the total Orbitz rebate received from Worldspan, or up to \$3, and the transaction fee paid to Orbitz by the charter airlines for each ticket is \$5.34. (The transaction fee for tickets that are more than \$150.00 is \$5.34, and \$2.67 for tickets that are less than \$150.) In comparison, airlines that do not enter into agreements with Orbitz do not receive the \$3 rebate and pay a higher commission of about \$10 per ticket to Orbitz.

¹⁵A charter airline, or Airline Charter Associate, is an airline that enters into an agreement with Orbitz. Under the Charter Associate Agreement, Orbitz provides discounted distribution costs in return for an assurance that it would have access to airlines’ publicly available fares, including web fares. Charter airlines account for 93 percent of all airlines that book through Orbitz. These airlines include all of the largest U.S. airlines (excluding low fare carriers Southwest and JetBlue) and most of the regional carriers. Other airlines that participate in Orbitz but are not charter associates include AirTran and ATA.

\$16 paid in booking fees per ticket.¹⁶ Since its implementation in 2002, 11 major airlines have signed up to participate in Supplier Link. As of July 2003, four airlines—America West, American, Continental, and Northwest—have begun to use the technology. Currently, these airlines process over 70 percent of their Orbitz bookings through Supplier Link. These airlines’ remaining Orbitz bookings need to go through the Worldspan GDS because of their complexity. Complex bookings that cannot at this time be handled by Supplier Link might include bookings with itineraries that involve trips flown by interlining airlines (i.e., two or more airlines that collectively transport a passenger from origin to destination) or international destinations.

In light of its new Supplier Link technology, Orbitz may be the first entity in the U.S. to perform functions similar to GDSs since finalization of the CRS rules in 1984. Furthermore, some believe that Orbitz represents a new entrant into the GDS market.¹⁷ However, Orbitz is a creation of the major airlines—as were the CRSs—and questions have been raised about whether Orbitz charter member airlines could use Orbitz to gain a competitive advantage over other airlines. DOT and DOJ have been involved in examining this issue. In its June 27, 2002, report to Congress, DOT found that Orbitz is not anticompetitive and more specifically, has shown no evidence of biased presentation of airline services. However, DOJ has not yet commented on the topic. As of July 2003, DOJ was continuing its review of Orbitz.

¹⁶All airlines that participate with Supplier Link, which must be a charter associate, pay Orbitz the same transaction fee as before (\$5.34 or \$2.67 depending on price of ticket) and a Supplier Link fee (\$4 per ticket), but do not pay booking fees. However, there are start-up costs for airlines that choose to participate with Supplier Link. Orbitz charged \$200,000 for a “first in type” Supplier Link connection. This fee covers the development costs for the interface between Orbitz’ system and an airline internal reservation system. Subsequent implementations connecting other airlines that use the same data processing company to “host” their internal reservation system costs those airlines \$75,000. According to Orbitz, its messaging costs are inconsequential. But, the airline may be charged by its internal reservation system owner for internal messaging costs both for bookings and for the “polling” queries necessary to maintain Orbitz’ availability cache.

¹⁷As noted earlier, other GDSs operate predominantly in foreign countries and have not penetrated the U.S. domestic market to any significant extent. These include Abacus, Amadeus, Axess, Infini, and Topas.

Internet-Based Travel Agencies That Use GDSs Also Book Tickets at a Lesser Cost to Airlines than Traditional Travel Agents

Other participants in the airline ticket distribution industry have also developed Internet sites that, like traditional travel agencies, book tickets through a GDS. Sabre entered the Internet market by creating Travelocity, which is a web-based booking engine that uses the Sabre GDS to query and book tickets. In general, Travelocity functions as an on-line travel agent: airlines make payments to Travelocity as well as pay booking fees to Sabre. As with other travel agencies, consumers pay it ticketing fees. For accounting purposes, Sabre pays Travelocity incentive payments, but the payments stay within the parent company.

Independent on-line travel sites have also emerged to sell airline tickets to consumers. One notable example is Expedia.com. In general, the relationships and flow of payments among Expedia.com, its GDS (Worldspan), airlines, and consumers resemble those of traditional travel agencies. Major independent on-line travel agencies continue to subscribe to a GDS and pay a subscription fee if they do not meet the high volume requirements for fee waivers. In turn, the GDS pays the on-line agency incentive payments for bookings, while charging airlines booking fees. In addition, some airlines make payments to these independent on-line travel agencies. Consumers also typically pay a \$5-\$10 fee to the new on-line sites for each ticket. In Expedia's case, since it is Worldspan's largest subscriber, it does not pay GDS subscription fees. Furthermore, since it books in such high volumes, it receives negotiated payments from its GDS and certain airlines.

Other independent on-line travel agencies, sometimes referred to as "opaque" travel distributors, have also entered the airline ticket distribution industry, typically offering low-cost tickets to consumers in exchange for less flexibility or choice. Opaque travel distributors book through GDSs to sell what the industry refers to as "distressed inventory." Analogous to a deep discount store or an outlet store, opaque distributors, such as Priceline.com, take bids from consumers for airline tickets. However, the consumer will know neither the carrier nor the exact departure times for his itinerary until after an airline accepts the consumer's bid, and the ticket is bought and paid for.

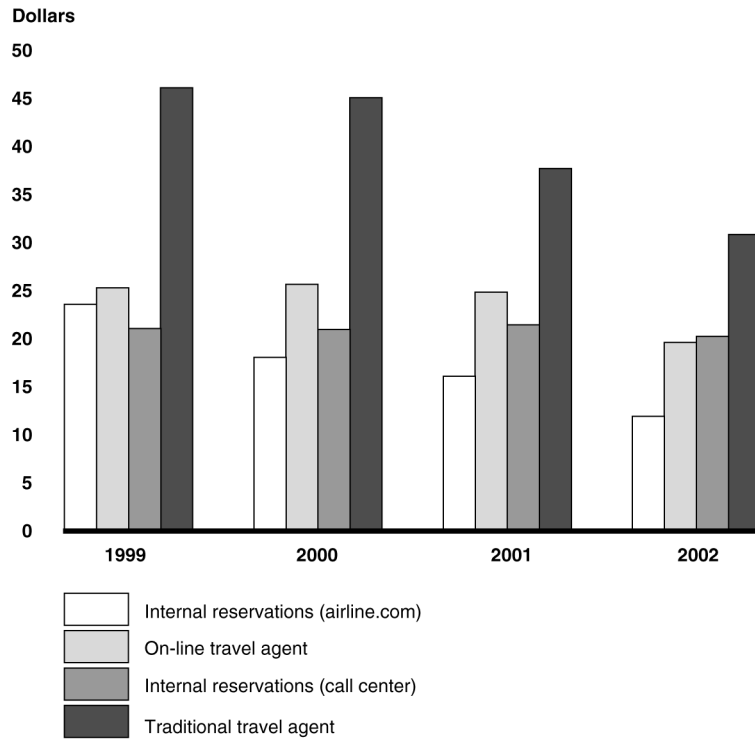
Despite the fact that airlines pay commissions and overrides as well as GDS fees for these on-line travel agency bookings, these bookings cost airlines less than bookings made through traditional travel agencies. This is in part because on-line consumers generally must purchase the ticket at the time of reservation, reducing "churn" that airlines claim is costly, by not allowing repeated bookings, cancellations, and rebookings prior to

purchase. A traditional travel agent has the capacity to make changes to a consumer's itinerary; however, for any changes to a reservation, additional GDS processing is required. GDSs charge the airlines a small amount for each cancellation and rebooking, so each such change adds to total airline distribution costs.

In 1999, on average, each ticket booked via a traditional travel agent cost an airline a total of \$45.93, compared to \$23.40 and \$25.12 for airline Website and on-line travel agency sites, respectively.¹⁸ Although costs associated with each of these distribution methods have decreased, bookings made through traditional travel agencies continue to cost much more than those made on line. From 1999 through 2002, the average cost to an airline for a booking made through a traditional travel agency decreased by 33 percent to \$30.66, while the average cost to an airline for a booking on its own Website decreased by 50 percent to \$11.75. Over the same period, the average cost to airlines for bookings made through on-line travel agencies decreased 23 percent to \$19.43. Figure 5 illustrates the change in average airline distribution costs by the different distribution methods.

¹⁸Throughout this report, we report the data in averages. We calculated the averages by aggregating data provided by a number of entities, and dividing that total by the number of entities providing data. See app. I for additional information on the scope and methodology.

Figure 5: Average Airline Booking Costs Per Distribution Method, 1999-2002



Source: GAO analysis of data provided by major U.S. airlines.

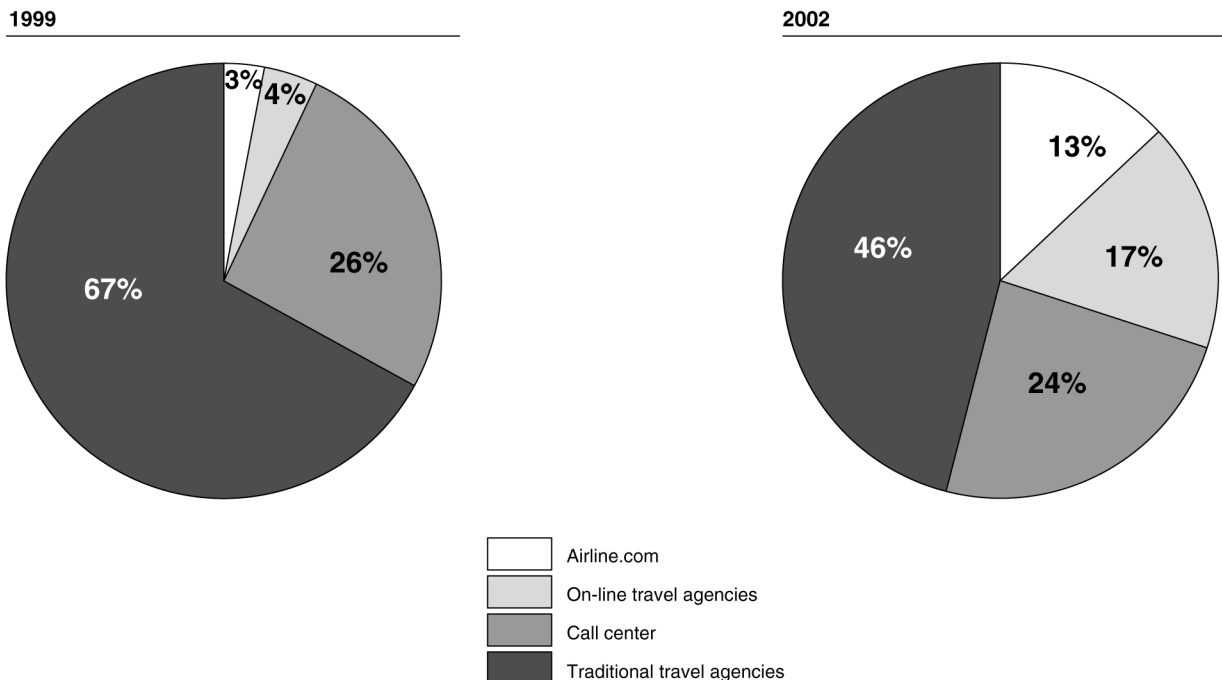
With Airline Encouragement, the Percentage of Airline Tickets Booked through the Internet Has Increased, as Has the Percentage of Bookings Processed without GDSs

Airlines have taken steps to encourage travelers to book tickets through less expensive, on-line distribution methods. Some airlines have instituted a fee for travelers who receive a paper ticket through a traditional travel agent. For example, Northwest charges a \$50 fee for a paper ticket as opposed to electronic tickets. Airlines may also reward on-line bookers with loyalty incentives (i.e., frequent flyer program bonuses). For instance, travelers booking on line with American may earn up to 1,000 AAdvantage® Bonus miles. Airlines—both directly and through on-line travel agencies—have also offered special “Webfares” and last minute Internet-only deals to encourage consumers to book tickets on the Internet.

While airlines continue to sell a significant proportion of their tickets through traditional travel agencies, the number of tickets sold through on-line distribution methods, including airline Websites and on-line travel

agencies, has increased rapidly since the late 1990s. Between 1999 and 2002, on average, the percentage of tickets that consumers booked through traditional travel agents fell from 67 percent to 46 percent. By comparison, the percentage of tickets booked on line (using both on-line travel agencies and airlines' own Websites) increased from 7 percent to 30 percent from 1999 to 2002. Throughout that same time period, airlines sold the remainder (roughly 25 percent) directly to consumers via their call centers (1-800 numbers). Figure 6 illustrates the change in distribution methods between 1999 and 2002.

Figure 6: Average Airline Bookings Per Distribution Method, 1999-2002



Source: GAO analysis of data provided by major U.S. airlines.

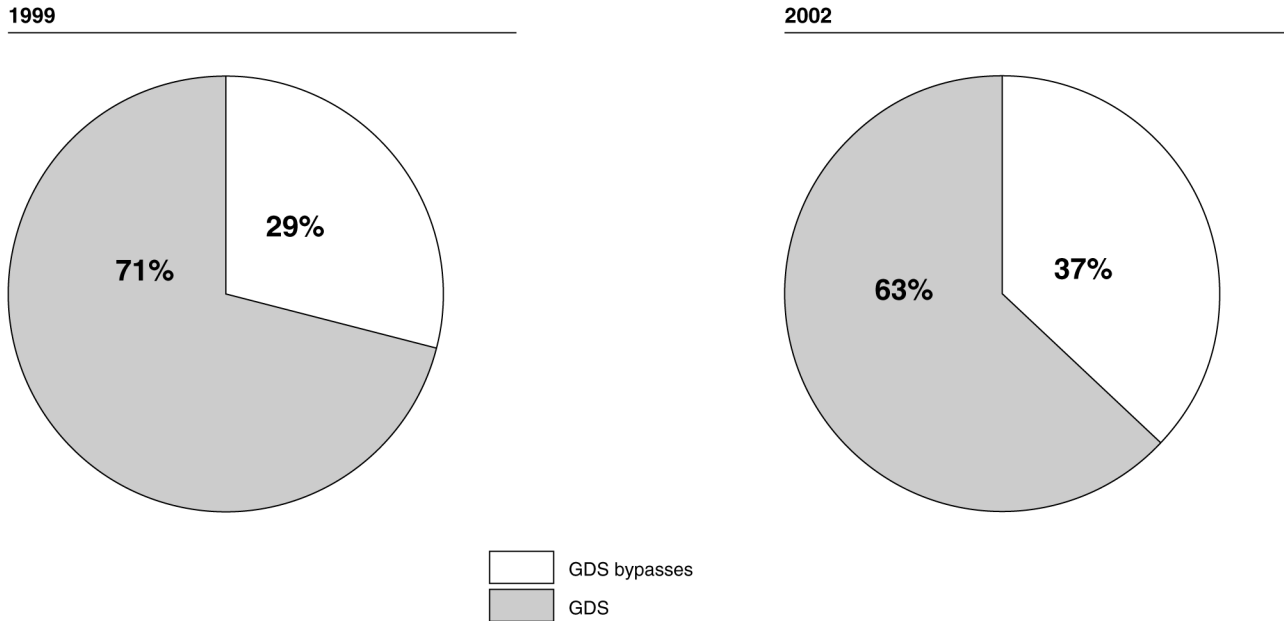
While business travelers generally continue to rely on traditional travel agents, trends suggest that leisure travelers are adopting the Internet as an alternative to traditional travel agents. The National Commission to Ensure

Consumer Information and Choice in the Airline Industry (NCECIC)¹⁹ reported in 2002 that business travel—usually the highest yield traffic for airlines—is often contracted out to travel agencies to manage. As a result, airlines report that traditional travel agencies (and therefore GDSs) will continue to play a vital role in the distribution of airline tickets. On the other hand, an increasing percentage of leisure travel is now booked via the Internet.

Bookings continue to be predominantly processed by GDSs, but since the late 1990s the percentage of on-line booking processed through airline internal reservation systems and Orbitz Supplier Link technology has increased. However, the sales through traditional travel agents continue to account for the majority of airline revenue, in large part because higher-priced business travel continues to be managed through traditional travel agencies. Figure 7 illustrates how the number of major U.S. airlines bookings processed through GDSs and GDS bypasses has changed from 1999 to 2002.

¹⁹NCECIC was authorized by Section 228 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (P.L. 106-18) on April 5, 2000.

Figure 7: Number of Airline Tickets Processed through and outside GDSs, 1999-2002



Source: GAO analysis of data provided by major U.S. airlines and an online travel site.

Note: GDS bypasses include bookings made through Orbitz Supplier Link, airline proprietary Websites, and airline call centers. GDS bookings include those performed by traditional travel agents and on-line travel sites that go through a GDS.

Airlines Reduced Travel Agent Payments, While GDSs' Payments to Travel Agents Increased

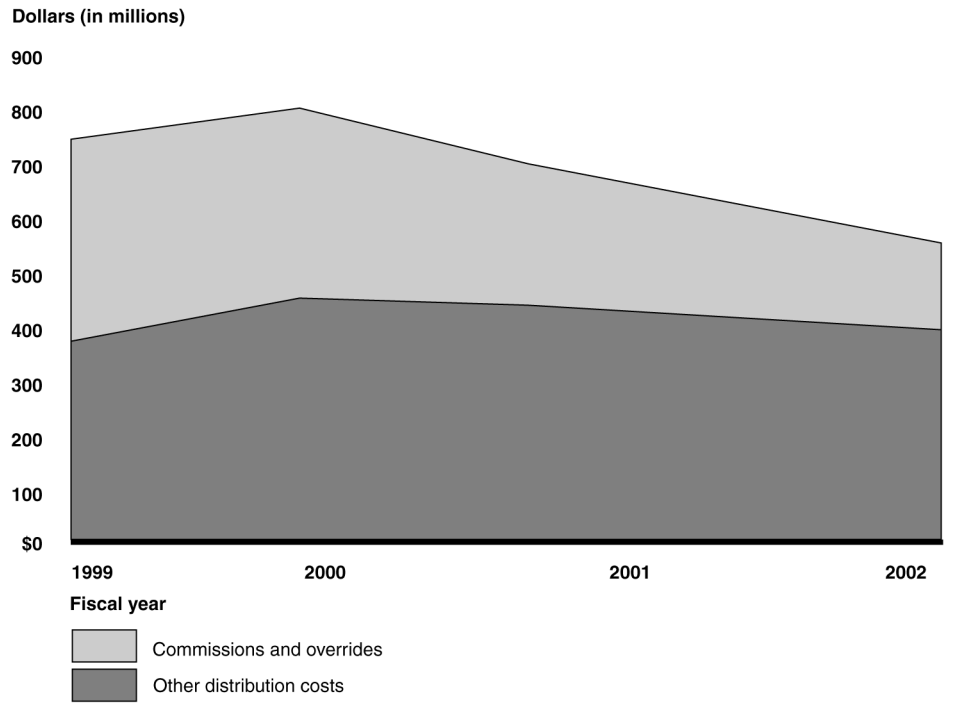
Travel agent reimbursement patterns have shifted significantly since the late 1990s. Much of the shift was caused by the airlines, which by 1998 reduced or ultimately ended the traditional practice of offering a flat published "base" commission (traditionally a percentage of each ticket price, which later was a flat fee for each ticket) to all travel agents as a means of reducing distribution costs.²⁰ Partly the CRS rules do not govern airlines' relationships with travel agencies, airlines were free to change their payments to travel agents in a way they were not free to do with

²⁰Airlines continue to pay service fees, in essence ticket commissions, for each booking made by certain on-line travel sites, and override commissions to travel agents that reach an established sales goal. Override commission policies vary from airline to airline. For instance, Delta no longer offers a flat base commission to all travel agents in the U.S. for its ticket sales, but instead negotiates private relationships to provide financial incentives that reward key travel agencies for their sales.

GDSs, and now use a system of privately negotiated commission arrangements with individual travel agencies. Not all travel agencies are able to negotiate such individual commission arrangements, and the terms of such agreements vary among travel agencies and among airlines. From 1999 to 2002, average annual payments by airlines to travel agencies decreased by 57 percent, from \$370 million to \$159 million, as airlines provided override commissions predominantly to those travel agencies with high ticket sales.

Figure 8 illustrates the decline in average commission payments by airlines to travel agencies in relation to total distribution costs. From 1999 to 2002, on average, major airlines reduced their total distribution costs by 25.8 percent, from \$732.9 million to \$543.6 million, or 43.6 percent on a per booking basis. Most of that reduction occurred in the payments by airlines to travel agencies, which decreased by 57 percent, from \$370 million to \$159 million. Despite a decrease of 8.5 percent in passenger traffic between 2000 and 2002, remaining distribution costs—which include rising GDS fees, as well as overhead, personnel, advertising, and credit card fees—were essentially unchanged over the period.

Figure 8: Average Annual Airline Total Distribution Costs, 1999-2002



Source: GAO analysis of data provided by major U.S. airlines.

Note: Amounts shown are in nominal dollars.

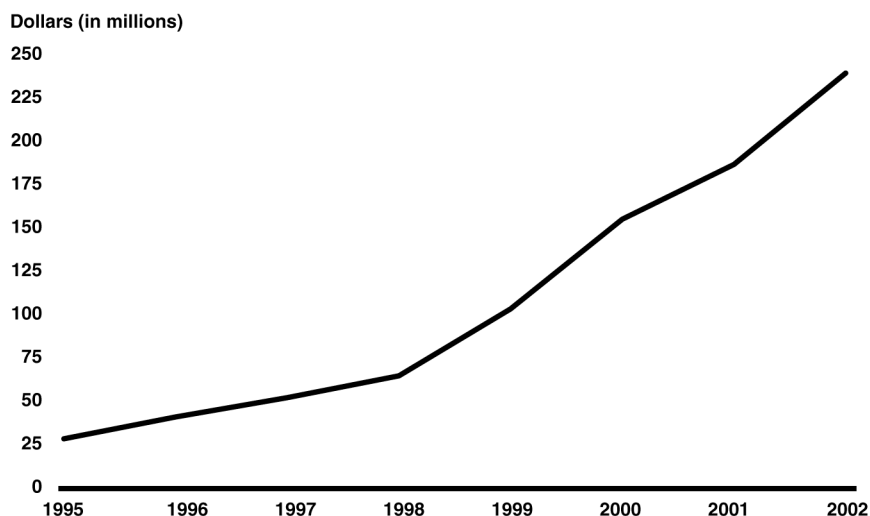
The largest travel agencies—those with total annual revenues in excess of \$50 million—represent less than 1 percent of travel agencies, but book almost 60 percent of total travel agent sales. By definition, because of their large volumes of sales, these large travel agencies are most likely to receive the majority of the airlines’ override commissions.

As airlines cut traditional travel agent ticket commissions, GDSs began increasing incentive payments to travel agencies.²¹ According to an official of a domestic GDS, since airlines (and, subsequently, other travel suppliers) reduced travel agent commissions, travel agencies sought out replacement

²¹We do not have access to specific agreements between GDSs and travel agents, and are therefore limited in our ability to detail overall financial flows between GDSs and travel agents.

sources of revenue, and GDSs responded with incentive payment increases. Large travel agencies were able to use their position in the industry between the GDSs and large segments of the traveling public to convince the GDSs to provide some form of incentive payment. At the same time, GDSs use incentive payments to compete for travel agent market share and to incentivize travel agents to book on their particular GDS. Generally, as with airlines' override commissions, a GDS pays incentives to those travel agencies with high booking volumes, as each booking results in the GDS receiving a fee from the airline. Between 1995 and 2002, on average, each GDS paid travel agencies an increasing amount of incentive payments, from \$22.3 million to \$233.4 million (over 900 percent). Figure 9 illustrates the average change in each GDS's payments to U.S. travel agents since 1995.

Figure 9: Average Payments to U.S. Travel Agents by Each GDS, 1995-2002



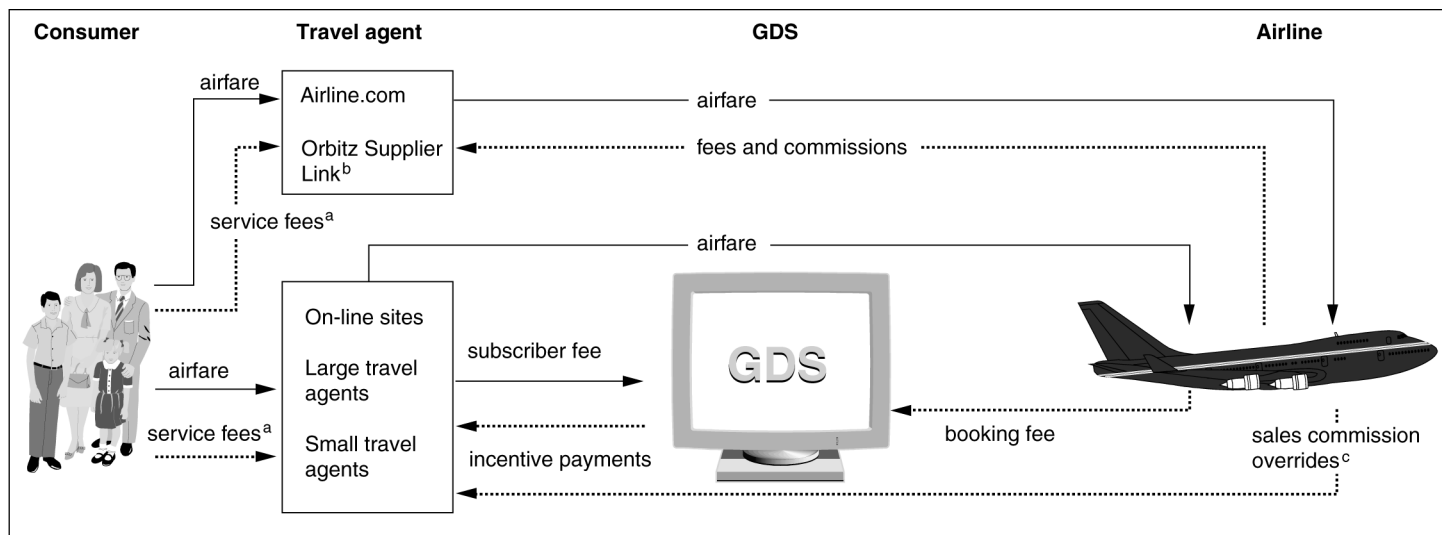
Source: GAO analysis of data provided by domestic GDSs.

Note: Amounts shown are in nominal dollars.

Shifts in travel agent payments have also occurred between travel agents and consumers. After airlines ended automatic base commissions, many travel agencies began to charge consumers service fees for booking tickets—previously included in the ticket price in the form of a commission that was invisible to the consumer. Figure 10 illustrates the current flow of payments among the four participants in the airline ticket distribution

industry. Compared to figure 3, it illustrates some changes that have taken place in the airline ticket distribution industry since the late 1990s—particularly the advent of various Internet booking methods, airline-initiated sites that bypass GDSs, the new flow of payments to travel agencies, and new service fees imposed on consumers.

Figure 10: Summary of Payment and Fee Flows in the Current Distribution of Airline Tickets



Source: GAO analysis.

^aConsumers pay services fees.

^bAirlines that subscribe to Orbitz Supplier Link pay less fees (including the commission per transaction) than GDS booking fee.

^cAirline commission and override payments vary and are based on travel agencies meeting certain sales goals.

Airlines Continue to Be Dependent Upon the GDSs

While each change—increased use of the Internet to process and sell tickets and reductions in airline payments to travel agencies—has contributed to the lowering of overall airline distribution costs, neither has reduced the effective requirement that nearly every major airline participate in and pay booking fees to each GDS. As previously stated, airlines continue to process over 60 percent of their tickets—mostly high yield business traffic—through the GDSs. Furthermore, airlines continue to need to subscribe to each GDS in order to reach all consumers. As DOJ described it in comments submitted to DOT during a 1997 review of the

CRS rules, from an airline's perspective, because each CRS provides access to a large, discrete group of travel agencies, each CRS constitutes a separate market. And unless the airline is willing to forego access to those travel agencies and the consumers they serve, it must participate in every CRS.

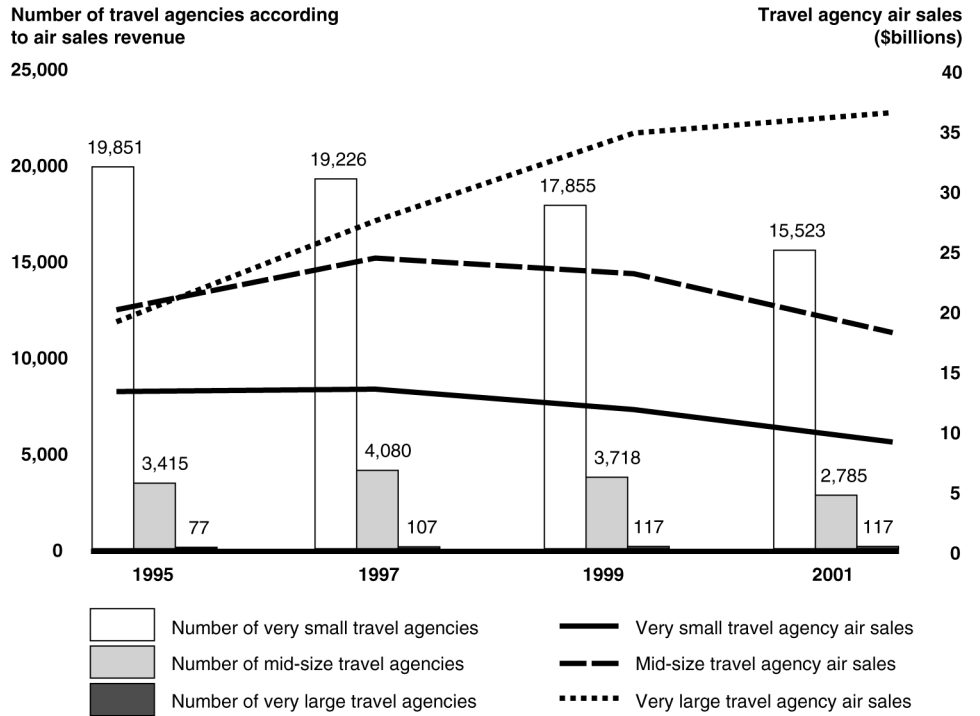
Changes in the Airline Ticket Distribution Industry Appear to Have Benefited Very Large Travel Agencies and Consumers Who Use the Internet

Large travel agencies and consumers who use the Internet appear to have benefited most from recent changes in the airline ticket distribution industry.²² Small travel agencies and the consumers who patronize them appear to have benefited least, if not been disadvantaged. Since the late 1990s, the number of very large travel agencies (i.e., those with total annual sales in excess of \$50 million) has stayed approximately the same, but their total annual air travel sales have almost doubled.²³ Because the largest travel agencies sell more air travel than any other category of travel agency, by definition they would likely qualify for both GDS incentive payments and airline override commissions. During this same period, the number of small travel agencies has steadily declined, as have their total annual air sales. Figure 11 illustrates changes in the number of different sized travel agencies and their sales of air travel over time.

²²For additional information, see U.S. General Accounting Office, *Domestic Aviation: Effects of Changes in How Airline Tickets Are Sold*, [GAO/RCED-99-221](#) (Washington, D.C.; July 28, 1999).

²³For the purposes of categorization, very large travel agencies generate more than \$50 million annual revenue. Midsize travel agents generate between \$2 million and \$50 million annual revenue. Very small travel agencies generate less than \$2 million annual revenue.

Figure 11: The Number of Travel Agencies, by Amount of Annual Revenue and Volume of Air Travel Sales



Source: GAO analysis of ARC data provided to NCECIC.

Note: Amounts shown are in nominal dollars.

The increase in on-line bookings appears to have had a more negative effect on smaller travel agencies than on large travel agencies because of general differences in the nature of their clientele. Leisure travelers increasingly book on line—usually well in advance with simple itineraries. According to the DOJ, leisure travelers with relatively simple itineraries are best suited to using the Internet. On-line travel agencies sell most tickets to price-sensitive leisure passengers.²⁴ In contrast, business consumers, who often use large travel agencies, are not likely to book on line because of restrictive corporate policies and complex business itineraries that are often subject to short notice changes. Those travel agencies also may

²⁴Reply Comments of the Department of Justice to DOT on the Notice of Proposed Rulemaking Computer Reservation System Regulations, June 9, 2003, p. 16.

provide reporting and record keeping services for large business customers.

According to officials from the NCECIC and the American Society of Travel Agents, small travel agencies are confronting financial pressure from both airlines and GDSs. First, small travel agencies may have difficulty securing airline override commissions or GDS incentive payments because of sales volume requirements. In addition, small travel agencies often must pay for GDS service and equipment, while these fees are frequently waived for agencies with high sales volumes. To survive, many smaller travel agencies have become focused on niche travel markets—for example, regional travel, hiking/biking travel, and cruise line travel—and charge service fees to clients.

The availability of Internet distribution methods appears to have positively affected Internet users. These methods provide fare and schedule information to consumers, and provide consumers with a number of Websites on which they can compare fare and schedule options. Moreover, consumers who use the Internet have access to less expensive webfares offered by the airlines. Airlines use such fares to encourage consumers to use Internet travel sites, as they are less expensive to the airlines. For instance, the results of a 2001 Forrester Research²⁵ survey of Internet users, which the NCECIC included in their 2002 report to Congress and the President, found that people who booked on line preferred doing so because they can readily compare various on-line travel sites, as well as access more diverse fares (i.e., webfares) than they can through a traditional travel agent. Furthermore, on-line customers may also avoid the higher ticketing fee that some travel agencies now charge (up to \$50), although many on-line travel agencies may charge their own smaller ticketing fees (\$5-\$10). Finally, the public perceives that booking on line is less expensive than booking through a traditional travel agent. Conversely, consumers purchasing tickets on airline Websites may not have complete and unbiased information when booking flights, which is important in a competitive industry. For example, Orbitz.com does not include schedule and fare information for certain low fare airlines, such as Southwest and JetBlue because these airlines have chosen not to participate.

²⁵Forrester Research is a firm that identifies and analyzes trends in technology and their impact on business.

Travelers who choose not to buy airline tickets on line, or who do not have Internet access, may be at a relative price disadvantage. Travelers using a traditional travel agent may pay a service charge of up to \$50. In addition, travelers who do not choose to use the now standard “electronic ticket” may be charged an extra fee by the airline for a paper ticket.²⁶ And as noted before, a travel agent may not have access to special webfares.²⁷ But travelers who do use traditional travel agents may benefit from the added flexibility of being able to change their reservation. An on-line travel agency booking is often difficult to change, especially if it is a low fare that is nonrefundable or subject to other restrictions. On the other hand, with the power to change a booking through the GDS, travel agents say they act as the consumer’s advocate with an airline, with consumers benefiting from the detailed knowledge and personal interaction that a travel agent can provide.

Business travelers are continuing to use traditional travel agencies to manage their travel because of corporate travel policies, including negotiated “private fares.”²⁸ According to the National Business Travel Association, less than 10 percent of corporate travel is booked through the Internet and many corporations forbid their employees from booking travel on the Internet, even if employees find a lower fare through that distribution method. Corporate travel policies can limit the employees’ ability to use the Internet in booking travel because they often require employees to use a contracted travel agency, through which they are booked on corporate contract carriers.²⁹

²⁶Travel agency customers who accept electronic tickets would not pay a fee for paper tickets, but would still pay a service fee to the travel agent.

²⁷Some airlines are offering traditional travel agents access to their “webfares.” Through American Airlines’ EveryFare® program, a travel agent can access full fares in exchange for the travel agent picking up some of the GDS booking fee. In addition, GDSs have created similar programs in an effort to provide travel agents with greater access to airlines’ special fares. For instance, Sabre has created its “Direct Connect Availability 3 year Option,” which rolls back approximately 12.5 percent off 2003 booking fee rates and freezes those rates for 3 years in exchange for full content of the participating airlines’ fares.

²⁸See app. II for more discussion of the effect of private fares on GDS costs.

²⁹On-line business travel management services, such as Sabre’s GetThere.com, are emerging. These services manage company travel, including compliance with travel policies.

Sufficient Data Were Not Available to Determine the Relationship between Booking Fees and Costs and the Presence and Use of Market Power

Because we lacked access to proprietary company data on costs and revenues, we could not develop the sort of evidence that would allow us to determine whether GDSs exert market power in the airline ticket distribution industry.³⁰ Booking fees charged by GDSs to airlines have risen over the past several years. From 1996 to 2001, the typical booking fee paid by a major airline has increased by 30.9 percent, from \$3.27 in 1996 to \$4.28 in 2001, a change greater than the overall inflation rate (as measured by the Gross Domestic Product chain-type price index) of 9.4 percent during this same time period. According to GDS officials, during this time period, the services and products offered by GDSs were enhanced and deliver substantial benefits to airlines (e.g., e-ticketing). Furthermore, one GDS official estimates that about 40 percent of its self-reported software development costs are meeting supplier (e.g., airlines) needs.

Because much financial information is proprietary,³¹ we were therefore unable to obtain a full breakdown of GDSs' costs in order to isolate the specific costs directly associated with the booking function ("transaction costs"). However, two GDS-reported costs associated with the booking function for which we were able to get data both rose between 1996 and 2002: GDS computing costs (i.e., total data center operating costs) and travel agent incentive payments.

- Computing costs have increased but because of inconsistent data reported by the GDSs, we were unable to determine the precise increase. However, the GDS computing cost increase is in contrast to general industry computing cost trends, which decreased by over 60 percent since the mid-1990s. According to officials with the GDSs, their computing costs per booking rose relative to commercial sector

³⁰The link between the price of a product and the cost of producing it is an important element in determining the level of competition or exercise of market power. Generally speaking, in competitive industries, revenues are closely related to costs (including a reasonable profit margin). Conversely, in industries that are less competitive, prices tend to be higher than costs (including a reasonable profit) and output tends to be less than in competitive industries. As demonstrated by their Horizontal Merger Guidelines (United States Department of Justice and Federal Trade Commission Revision to the Horizontal Merger Guidelines, Apr. 8, 1997), the Department of Justice and others who analyze competition and market power would also examine the structure of the market, including the number of competitors, the ease with which new competitors could enter the market, and other contributing or mitigating factors in forming a conclusion about competition or market power.

³¹See app. I for more information on limitations associated with obtaining proprietary data.

computing costs because (1) bookings have become more complex, requiring more processing to complete and (2) the volume of transactions shopping for low fares that do not result in a booking has risen, especially for on-line travel agencies used by consumers. They stated that the additional processing required offset any general decrease in computing costs.³² For example, airlines have offered more types of fares to consumers (e.g., “private fares” available to large corporate clients, government fares, and conference specials). Many of these fares are stated as a percentage of the full coach fare, which airlines can change several times daily. GDSs must quickly match the correct fare with each customer for each specific flight. Moreover, GDS officials also stated that airlines are keeping more detailed Passenger Name Records with all reservations. The amounts of data that the GDSs track with these records have also increased over time, as airlines have made efforts to better serve passengers (e.g., frequent flyer accounts and seating preferences). It is unclear how much of this increasing GDS functionality, the costs of which are presumably passed on to the airlines through increases in booking fees, adds value for the airlines. Some airlines have complained that they do not need certain elements of the increased functionality (e.g., seat maps) and are paying for something they do not want at a time when they are struggling financially.

- As discussed above, GDSs’ incentive payments to travel agencies have increased. GDSs provide incentive payments to travel agencies to reward them for using their system. The largest travel agencies were able to use their position in the industry between the GDSs and large segments of the traveling public to convince the GDSs to provide increased incentive payments. On average, incentive payments from GDSs to travel agencies increased by over 500 percent from 1996 to 2002, rising from \$34.9 million to \$233.4 million.

Computing costs and travel agent incentive payments do not encompass all airline ticket booking-related costs, and we were unable to get financial data on other costs (e.g., booking-related hardware costs) related to GDSs’ airline ticket booking function, which might have allowed us to determine a relationship between booking fees and related costs and to consider what

³²See app. II for further discussion of how GDS computing costs compare to commercial sector computing costs.

the relationship indicated about the presence and possible exercise of market power by the GDSs.

To identify other information about the possible existence and use of market power, we reviewed the comments submitted to DOT since its November 2002 Notice of Proposed Rulemaking of the CRS rules. GDSs stated that they do not have market power. However, some airlines contend that they do operate under GDS market power. For example, America West contends that each CRS exercises monopoly power over it. In its June 9, 2003, comments to DOT, DOJ concluded based on its market structure analysis that despite the recent growth of Internet distribution, GDSs continue to have market power over airlines.³³ DOJ found no evidence that existing regulations designed to erode that power had succeeded in the past or are likely to improve the situation in the future. Rather, they concluded that many of the existing regulations have been ineffective in reducing GDS market power, which derives from the inability of most airlines to withdraw from any GDS. DOJ noted that while the CRS rules have been effective in eliminating discriminatory pricing (charging different fees to target specific airline competitors), it has not prevented GDSs from charging fees above competitive levels. Nevertheless, DOJ concluded that recent changes in the industry have eliminated the need or utility for most of the CRS rules and that anticompetitive practices be enforced through case-by-case antitrust investigations.

Concluding Observations

A competitive airline ticket distribution industry, which includes the airline, GDSs, and travel agent industries, continues to be important because noncompetitive practices may adversely affect airlines and consumers. Originally, the CRS rules were focused on reducing the market power of airline-owned CRSs to prevent owner airlines from using the CRSs to gain a competitive advantage over nonowner airlines. With the GDSs now independent from the airlines, questions have been raised regarding the GDSs' exercise of market power over all airlines. Among other things, because GDSs do not compete with each other for airline business, airlines and consumers may be subject to prices that are higher than in more competitive markets. While our limited ability to get complete booking cost and fee data from the GDSs did not allow us to independently evaluate whether GDSs currently exercise market power, the market

³³Reply Comments of the Department of Justice to DOT on the Notice of Proposed Rulemaking Computer Reservation System Regulations, June 9, 2003, p. 2.

position of large travel agencies or the overall performance of the industry, evidence that we developed in this review provides suggestions of both a functioning market and competitive flaws.

On the one hand, our review provides some indications of a market that is functioning and adaptive. For example, the use of the Internet has grown significantly, and overall prices for airlines for each form of distribution have fallen. In addition, the development and evolution of Orbitz and expansion of direct airline Internet booking reflects that at least some lower-cost substitutes for GDSs have emerged. Airlines and other participants in the ticket distribution system have developed an ability to use Internet innovations to limit distribution expenses. Similarly, the Internet's ability to provide consumers with access to a wide variety of, often low cost fares (i.e., transparency) has arguably benefited them.

On the other hand, our review also highlights issues that suggest the continued possibility of GDS market power as well as the growing power of large travel agencies. The structure of the industry, in which airlines are dependent upon the GDSs to obtain ultimate access to large portions of travel agents and potential passengers (especially high yield business traffic), perpetuates the potential for the existence and exercise of market power by GDSs. Although Orbitz may offer a technological substitute that mitigates the market power of GDSs for some airlines, Orbitz' relationship with major airlines has raised different concerns about the potential for owner airlines once again using their ownership position to distort airline competition. Our review also indicates that the largest travel agencies, upon whom both airlines and GDSs depend to reach a large percentage of the higher-paying business travelers, currently have considerable leverage in the industry. This leverage is reflected by their ability to obtain rising incentive payments from GDSs as well as commission and override payments from airlines.

The innovation that has occurred in the airline ticket distribution industry—particularly the growth of the Internet—is noteworthy. These innovations occurred under the framework of federal regulations, which DOT is currently reviewing. DOJ stated that some of these rules have failed to accomplish their goals and therefore need to be removed. At the same time, DOJ's antitrust review of Orbitz continues. Thus, the federal interaction with the industry continues on both an industry-wide and case-by-case basis. At the same time, it will be important to continue monitoring how developments in the industry affect competition and consumers.

Agency Comments

We provided a draft of this report to DOT for review and comment. DOT provided us with technical comments, which we incorporated where applicable. We also provided relevant sections of this report to DOJ, the three major U.S. GDSs, Orbitz, and most major U.S. airlines for review. These organizations provided technical corrections, which we incorporated as appropriate.

We will send copies of this report to the Honorable Norman Mineta, Secretary, Department of Transportation. We will make copies available to others on request. In addition, the report will be available at no charge on our Website at www.gao.gov.

If you or your staff have any questions about this report, please call me at (202) 512-2834. I can also be reached at HeckerJ@gao.gov, or Steve Martin at MartinS@gao.gov. Appendix III lists key contacts and key contributors to this report.



JayEtta Z. Hecker
Director, Physical Infrastructure Issues

Objectives, Scope, and Methodology

This report examines three questions:

- What have been major changes in the airline ticket distribution industry since the late 1990s, and how did these changes affect airlines?
- How have these changes in the airline ticket distribution industry affected travel agents and consumers?
- What does the relationship between global distribution system's booking fees and booking-related costs suggest about the presence and use of market power?

We limited the scope of this review to the three global distribution systems (GDS) that handle over 90 percent of U.S. airline bookings. These three GDSs are Galileo, Sabre, and Worldspan. We excluded other GDSs that operate predominantly in other countries. Those excluded from this review include Abacus, Amadeus, Axess, Infini, and Topas. In addition, we did not have access to the individual contracts between the various industry entities; and therefore, the descriptions of the relationships are generalizations.

To determine how the airline ticket distribution industry has changed and the effects on airlines since the late 1990s, we analyzed industry booking trend and cost data (e.g., airline and GDS payments, annual airline expenditures per distribution method). These data are proprietary, so we agreed to aggregate them so that no private company materials or information would be publicly disclosed in an identifiable form. Consequently, all data are reported in averages. Furthermore, since these data are proprietary, we were unable to independently verify them because we have no authority to require access to the underlying data. However, we applied logical tests to the data and found no obvious errors of completion or accuracy. Along with our use of corroborating evidence, we believe that the data were sufficiently reliable for our use. In addition, we examined documents from the Department of Transportation (DOT). We interviewed DOT officials, Department of Justice (DOJ) officials, industry experts, the three domestically based GDSs, seven major airlines, and four travel agencies (e.g., a small traditional travel agency, and the three leading on-line travel sites—Travelocity, Expedia, and Orbitz). We attempted to interview all of the major travel agencies, but the top three would not agree to meet with us. In addition, we were unable to obtain any airline or GDS cost data related specifically to those travel agencies.

To describe how changes in the airline ticket distribution industry have affected travel agents and consumers, we analyzed travel agent data (e.g., sales and revenues). We obtained these data from the National Commission to Ensure Consumer Information and Choice (NCECIC), a commission authorized under Section 228 of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (P.L. 106-181, AIR-21) to study two distinct issues—first, the current state of the travel industry, and the impact of changes in the industry on consumers; and second, the potential for impediments to distribution of information to cause injury to agencies and consumers. We contacted the Airline Reporting Corporation (ARC), the source of the NCECIC travel agent data, to clarify the nature of the data and thus we decided the data were reliable for our purposes. Lastly, we interviewed travel agents, industry group representatives, and officials from the NCECIC.

To determine the relationship between GDSs booking fees and booking-related costs and what it may suggest about the presence and use of market power, we analyzed GDS booking fee and cost data (e.g., computing costs and travel agent incentives). We obtained these data from the three U.S. GDSs. Since these data are proprietary, we agreed to aggregate them so that no private company materials or information would be publicly disclosed by us in an identifiable form. Consequently, all data are reported in averages. Furthermore, since these data are proprietary, we were unable to independently verify them because we have no authority to require access to the data. However, we applied logical tests to the data and found no obvious errors of completion or accuracy. We believe that the data are sufficiently reliable for our use. We analyzed specific booking fee-related costs that were available to us—computing costs and travel agent incentive payments. Computing costs are based on data center operations costs, including hardware, software, leases, and personnel costs. We compared trends in these computing costs with industry computing cost trends using mainframe data center costs from the Gartner Group, a well-known research and advisory firm that helps its clients understand technology and drive business growth.

We were limited in our review because we did not have full access to proprietary data. One of the GDSs (Worldspan) is privately held and does not file financial data with the U.S. Securities and Exchange Commission (SEC). Although Sabre and Galileo are publicly held and file financial data with the SEC, they are not required to disaggregate cost data. Moreover, it is difficult to compare even the data that Sabre and Galileo did provide, since they may report their costs differently, as the Generally Accepted

Accounting Principles allow companies to allocate costs in various ways. Therefore, we were not able to obtain complete and detailed data from the GDSs on all costs directly related to booking transactions. However, we did review the comments that were submitted to DOT regarding its review of the CRS rules. Prominent among those were the June 9, 2003, DOJ comments, which were based on DOJ's expert, market structure analysis. We also discussed with DOJ the comments they submitted. In addition, we sought cost and booking data that dated from 1978 to the present. However, no airline was able to provide data for a time earlier than 1996. Consequently, we limited our review to the 4 years covering the period 1999 to 2002.

We conducted our review between September 2002 and July 2003 in accordance with generally accepted government auditing standards.

Computing Cost Trends at Global Distribution Systems

According to the Gartner Group,¹ overall mainframe data center costs continued to decrease every year from 1994 through 1998.² The Gartner Group found that on a per-millions-of-instructions-per-second (MIPS) basis (a common measure of usage), data center costs have decreased during the same time period. Our analysis of the global distribution systems (GDS) per MIPS computing cost (cost per MIPS) suggests that GDS per MIPS costs also decreased from 1995 through 2002. Thus, on a per MIPS basis, the general trend of computing costs incurred by the GDSs seem to be consistent with the industry trend reported by Gartner Group for the years 1994 through 1998.

For technology-based companies like GDSs, an important cost measure is the computing cost per booking. This measure is significant because GDSs generate revenue largely based on the volume of booking transactions processed. On an annual basis, we found that the computing cost per booking increased slightly over the years 1996 and 2001, the years for which we had relevant data from most of the GDSs. According to the GDSs, the per-booking computing cost has risen because each booking has become more complex over time, requiring more processing—more MIPS—to complete a booking, thereby more than offsetting any decrease in per MIPS computing costs. One way to explain the increasing complexity of bookings is through the number of messages that are required to complete a booking. A message is typically a single command typed by a travel agent in a GDS reservation system. A message is sent every time a travel agent types a command and hits the Enter key on the keyboard. For example, for one GDS, the number of instructions needed to process each message increased by 58 percent from 1999 to 2002. For that GDS, the average number of messages required for each booking increased by 118.6 percent from 1993 to 2002. In addition, a message can be very simple (e.g., what gate is flight 442 scheduled to arrive at in Dallas today) or very complex (e.g., what is the cheapest itinerary available to fly roundtrip between Los Angeles International Airport and any of New York City's three major airports, departing next Tuesday morning).

¹The Gartner Group is a well-known research and advisory firm that helps its clients understand technology and drive business growth.

²For the years 1994 through 1998, the Gartner Group analyzed the costs of operating a typical mainframe data center using a budget model that included seven key areas: hardware, software, business resumption, occupancy, operations, technical services, and finance and administration.

GAO Contacts and Staff Acknowledgments

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