The Antitrust Implications of Computer Reservations Systems (CRS's)

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THE PASSAGE of the Airline Deregulation Act\(^1\) dramatically altered the airline industry. Market forces, rather than government agencies,\(^2\) began to regulate the industry. The transition, however, has not been an easy one. Procedures and relationships well suited to a regulated industry are now viewed as outdated, onerous, and even anticompetitive.

The current conflict over carrier-owned computer reservation systems (CRS's) represents one instance of these problems.\(^3\) The air transportation distribution system relies heavily on the use of CRS's, particularly since deregulation and the resulting increase in airline activity.\(^4\) One

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\(^3\) 49 Fed. Reg. 11,644 (1984). The text only discusses, as did the CAB, problems with CRS's owned by individual carriers. There is at this time one system, Tymshare's Mars Plus, that is not owned by an airline. \textit{Id.} at 11,667. Despite suggestions that any rule apply to third-party as well as carrier-owned systems, the CAB noted numerous reasons for not including Mars Plus in its CRS rulemaking. Because of Tymshare's low market share and different system structure, the potential for abuse was not present. The significant aspect of a non-carrier's position is that, unlike an airline owner, there is no incentive to impede airline transportation competition because the CRS revenues are generated from a different source. Also, the CAB felt that the non-airline CRS's did not have the capacity to engage in the type of conduct complained of and which its rule sought to prohibit. \textit{Id.} at 11,645.

\(^4\) \textit{Id.}
study estimates that eighty percent of all travel agents use CRS's. These agents account for forty to ninety percent of most airlines' ticket sales. Consequently, CRS owners, through their respective CRS's, enjoy substantial control and access to the preferred means of airline transportation distribution.

As the influence of CRS's began to increase, non-owning carriers and travel agents complained to both the Civil Aeronautics Board (CAB) and Congress. Congress responded by authorizing the CAB to conduct an investigation into the competitive effects and antitrust implications of CRS's. The CAB study eventually resulted in a rulemaking and finally the enactment of a rule in July of 1984. Rather than end the controversy, the new rules seem merely to mark the end of the first battle. Though the rule has only recently become effective, non-owning carriers have already pushed for its amendment, in addition to exploring other means to attack the power of CRS owners.

I. CRS Development and Industry Structure

Travel agents use CRS's to make flight reservations for

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5 Review of Airline Deregulation and Sunset of the Civil Aeronautics Board: Hearings Before the Subcomm. on Aviation of the House Comm. on Public Works and Transportation, 98th Cong., 1st Sess. 40 (1983) (CAB report to Congress on airline computer reservation systems, citing a study by Lou Harris of Travel Weekly magazine) [hereinafter cited as Hearings]. The information in the study was compiled by surveying travel agents and was published in May of 1982. Id. at 38.

6 Id. at 41. The CAB report asserted that if anything, the percentage of ticket sales attributable to automated travel agents (agents with CRS's) would rise in the future. Id.

7 Id. at 32. The carriers complained that the CRS market structure and market entry conditions were such that CRS owners could manipulate air transportation sales. Id.

8 128 Cong. Rec. H9515 (daily ed. Dec. 13, 1982) (conference report accompanying Pub. L. 97-369). The authorization was attached to a House appropriations bill for transportation agencies. The House included the Department of Justice in the investigation, and asked that the CAB study be made in conjunction with the Department of Transportation. Id.


the consumer. A CRS basically involves the use of a computer terminal whereby schedules, fares, and seat availability information are displayed for the travel agent who, in turn, advises the customer. This information appears to the agent on a series of screens shown in succession until the appropriate information is found. The different screens of information are fed to the agent's terminal from the respective host airline's reservation database. The factual information for the computer databases of host airlines comes from three sources. The Official Airline Guide (OAG) gathers the flight schedule information for all airlines and compiles a computer tape of the schedules on a weekly basis. Second, the Airline Tariff Publishing Company (ATP) collects all of the airlines' fare information. The third source consists

11 *Id.* Travel agents can also issue tickets, make hotel and rental car reservations, and even keep office accounts on a CRS. *Id.* at 52,548.

12 49 Fed. Reg. at 11,648. Prior to the advent of CRS's, the making of flight reservations was a tedious and time-consuming process. The OAG published a large and unwieldy manual containing flight schedules and some fare information. For the complete fare and tariff information, however, the agent would have to consult the individual carrier's publications. The actual reservations would be made by telephone and the ticket written by hand by the agent. Obviously, arranging a simple trip would require the consultation of a number of different sources. In addition, the agent would have no idea of availability until he called the airlines. The inefficiencies of the system led to the development of inhouse systems and subsequent attempts between 1967 and 1976 to establish industry-wide CRS's. See infra notes 16-19 and accompanying text, which discusses the operation of a CRS.

United Airlines was the first to develop a CRS. 49 Fed. Reg. at 11,648. American Airlines soon followed with its SABRE system. Other systems include TWA's PARS system, Delta's DATAS II, Eastern's SODA, and Tymshare's MARS PLUS (the only major system not owned by a carrier). *Id.* at 11,649. For more detailed information concerning the unique features of each system, see Hearings, supra note 5, at 52-65, where the CAB's report is included. In 1976 United Airlines introduced the first CRS, APOLLO, and began to offer the service to travel agents.


14 *Id.* The database is part of the airlines' inhouse system by which it directly books its own flights. *Id.*

15 The term "host airline" refers to a CRS owner. The terms are used interchangeably in all sources and are used in the same fashion here.

16 49 Fed. Reg. at 11,648. The schedules are only for direct flights. Connections are made by the CRS owners for non-direct flights. *Id.* at 11,648-49.

17 Hearings, supra note 5, at 45. Fares are updated on a daily basis and are shown along with any conditions accompanying the fares. *Id.*
of the in-house computers of all airlines and provides the data on seat availability. The in-house computers communicate with the host airline's database by way of a radio communications system. All the data is consolidated by the host airline and readied for transmission. In addition, there are numerous variations and optional services which a CRS can offer to an agent. In sum, a CRS consists of a central database, periodically updated, which feeds to and is accessed by the numerous terminals of the subscribing agents.

In addition to information sources, it is important to understand the display format as shown on the CRS terminal. There are several formats from which the agent can choose. The agent may request all the schedules for a particular city-to-city flight route, called a city-pair market, that fit the requested departure time. Another type of format may include, along with flight information, seat availability information in reference to the type of fare requested. Of course, as more information is provided for each flight, a greater number of lines are used to display each flight, and the number of screens needed to view all applicable flight information increases. Agents

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18 Id.
19 The system is operated by Aeronautical Radio, Inc. (ARINC). Id. The main problem with ARINC is that, due to the huge volume of messages sent by the various airlines, much information is mistransferred or delayed, causing major airlines to establish direct computer to computer lines. Id.
20 Id. In addition there are three different types of CRS's; direct access, multiple access, and proprietary access. Direct access allows an agent to communicate with the computer of a host airlines as well as the computers of other participating carriers. Multiple access allows an agent to have direct access using a switch but normally allows only direct communication with the principle carrier. Other options offered by CRS's include accounting packages, automatic pricing, complete rules displays, and advance boarding pass capabilities. 49 Fed. Reg. at 11,650.
21 Hearings, supra note 5, at 45.
22 Id. A "city-pair market" is the market for sales for a route between two specific cities; i.e., Dallas to New York. Id.
23 Id.
24 Id. Other data shown may include the type of aircraft, connecting cities, and travel messages ranging from airport congestion reports to promotional messages. Id.
25 Id. at 46. There is a natural tendency for agents to book flights from the earliest screen with a suitable flight. Id. at 67. Consequently, the opportunities
are naturally inclined to book the first suitable flight.\footnote{Id. at 46.}

Once a suitable flight has been located, the agent will request a reservation through the CRS.\footnote{Id.} If the flight belongs to the CRS owner, the "host," then the reservation is immediately recorded and a ticket can be issued.\footnote{Id.} Should the flight be on a "non-host" carrier, however, the reservation must be relayed.\footnote{Id.} Some systems circumvent this problem with direct access to certain non-host carriers' in-house systems.\footnote{See supra note 19 and accompanying text.} The consensus among agents is that the more direct the access to the internal system of the particular carrier, the more reliable the information.\footnote{Hearings, supra note 5, at 46.} Reliability is an important factor in an agent's decision between alternative bookings.\footnote{49 Fed. Reg. at 11,652.}

CRS's are available to agents through leasing agreements, though it is also possible for the agency to purchase the equipment.\footnote{See supra note 19 and accompanying text.} Lease costs vary with the type of system used, the number of terminals leased, and the number of locations involved in the lease.\footnote{See supra note 20 and accompanying text.} Lease costs are often affected by competition. In certain markets, CRS owners compete vigorously for agent subscriptions, sometimes to the point of leasing below direct costs.\footnote{Hearings, supra note 5, at 78.} Lease periods are relatively long, ranging from four to ten

for a given carrier to receive an agent's booking depends a great deal upon the structure and format choices made available by a CRS owner. \textit{Id.}
years with the trend being towards longer leases. The leases often include provisions restricting an agent's ability to subscribe to more than one system.

Non-host carriers as well as travel agents must gain access to a system. Originally, non-host carriers could become "co-hosts" by paying small booking fees, in addition to a contribution to capital and a promise to help market the system in areas where the non-hosts had large market shares. Later, these co-hosts were charged for each segment at an agreed charge. Co-hosts usually enjoyed preferential screen placement. Recently American and United, the two largest CRS owners, significantly increased their booking fees, though charging relatively lower fees to high volume carriers. The participation of high volume carriers in a system is crucial to its marketability.

Another recent development is the use of "net ticketing arrangements." Carriers often write tickets, either in-house or through agents, under their name but for transportation by another carrier. Originally this service was performed free of charge, but net ticketing arrangements require that when the CRS host writes more tickets for

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36 49 Fed. Reg. at 11,651. SABRE leases are generally four to five years while APOLLO leases range from seven to ten years. Id.
37 Id. The restrictions for United include a rule that requires APOLLO subscribers to book at least ninety-five percent of their bookings through APOLLO. Id. American achieves the same effect by requiring the agencies to have at least as many SABRE terminals as other CRS terminals. Id. at 11,652. The Department of Justice found that only 12.6% of all automated agencies had more than one type of CRS at a given location. Id.
38 Id. at 11,651.
39 A segment is basically a flight between two airports. A fee is charged for each flight reservation made between two stops. Thus a trip reservation made between two connecting flights would be charged the price of two times the segment fee, usually two to three dollars. See Hearings, supra note 5, at 82.
40 Id.
42 Hearings, supra note 5, at 82.
43 Id. CRS owners must include these high volume carriers to enhance the attractiveness of their product for potential travel agency subscribers. High volume co-hosts have used their market position to negotiate the lower fees. Id.
45 Hearings, supra note 5, at 85-88.
another carrier than that carrier writes for the CRS host, the ticketing carrier is required to pay the CRS host a substantial per-ticket fee for the excess number.\textsuperscript{46} CRS hosts were able to arrange these agreements by threatening the carriers with the denial of CRS access.\textsuperscript{47} In sum, CRS hosts predominantly dictate the access terms for participating carriers.

CRS's are basically automated versions of the old fare books and flight schedules. They are high-tech tools for the travel agent and reservation desks for the airlines. CRS's have filled their role so successfully that they have had a major impact on the way airlines and air travelers do business.

II. CRS's in the Air Transportation Industry

CRS's perform a vital function in the air transportation industry. This function cannot be appreciated without understanding two aspects of the airline industry. One aspect is the essential nature of CRS's for the travel agent. The second is the crucial role of the travel agent in airline ticket sales.

Modern travel agencies demand the use of CRS's because airline ticketing without CRS's is slow and inefficient.\textsuperscript{48} Today, with deregulation dramatically increasing the number of carriers, flights, fares, and restrictions, the old method is barely a useful supplement to a CRS and certainly not a substitute.\textsuperscript{49} Agents can make a reservation using a CRS in one-third the time it took before.\textsuperscript{50} An independent study found that CRS use creates a forty-two percent productivity gain for agents over the previous method.\textsuperscript{51} Agents and carriers agree that in the present air transportation distribution system, the use of a CRS

\textsuperscript{46} Id. The fees may be as high as three dollars per ticket. Id. at 87.

\textsuperscript{47} Id. at 86.

\textsuperscript{48} See supra notes 31 - 34 and accompanying text for a discussion of the previous method of ticketing.

\textsuperscript{49} 49 Fed. Reg. at 11,648.

\textsuperscript{50} Hearings, supra note 5, at 37.

\textsuperscript{51} Id. at 38.
has become essential.\textsuperscript{52}

The importance of CRS's is only magnified by the ever expanding role of travel agents in air transportation distribution. Travel agents are responsible for approximately fifty-four percent of domestic airline revenues and eighty percent of foreign airline revenues.\textsuperscript{53} Travel agents are uniquely able to arrange consumer travel.\textsuperscript{54} The consumer's other option has been direct sales from the airline. In recent years, however, the percentage of sales attributable to each type of distribution system has changed dramatically. Travel agents have increased their share from thirty-eight percent of domestic airline ticket sales in 1977, to fifty-three percent in 1979, and to about sixty-five percent in 1982.\textsuperscript{55}

There are three reasons for the shift in sales. First, the number of fares, schedules, and restrictions have increased geometrically since the advent of deregulation.\textsuperscript{56} Only by using a travel agency may a consumer, in one step, determine the best flight and purchase a ticket. Second, travel agents provide other needed services for the consumer. Travel agents can sell other forms of transportation, make rental car reservations, hotel reservations, design complete travel packages, make arrangements for passports and visas, issue travelers checks and travelers insurance, and even sell tours and charters.\textsuperscript{57} Consumers

\textsuperscript{52} 49 Fed. Reg. at 11,649. This statement is based in part on the statements of American Airlines on the importance of CRS's. \textit{Id.}

\textsuperscript{53} \textit{Competitive Marketing Investigation}, CAB Order 82-12-85, Dec. 16, 1982. The investigation was initiated as part of the CAB's reevaluation of its regulatory stance in the wake of the Airline Deregulation Act. Pub. L. No. 95-504, 92 Stat. 1705 (codified at 49 U.S.C.A. § 1401 (Supp. 1984)). The CAB found that travel agent members of the Air Traffic Transport Association (ATC) and International Air Transport Association (IATA), as well as those organizations, should no longer receive antitrust immunity in a post-deregulation era. \textit{Competition Marketing Investigation}, at 4. The CAB ruling may be reversed by congressional action, but this issue is intimately connected with the CRS issue. Should the CAB's decision stand, it may have negative ramifications for the validity of its arguments in its CRS ruling. \textit{Id.} at 4.

\textsuperscript{54} \textit{Competitive Marketing Investigation, supra} note 53, at 8.

\textsuperscript{55} \textit{Id.} at 19.

\textsuperscript{56} \textit{Id.}

\textsuperscript{57} \textit{Id.} at 17.
are said to "view travel agents as providers of objective travel advice." Third, travel agents are almost the exclusive source of interline tickets for the consumer. A consumer forced to utilize two or more airlines to reach his destination has little choice but to consult an agency. The complexity of today's airline transportation offerings has led to this dependence.

In sum, CRS's have become as important to the airline industry as the telephone is to American business. The majority of airline flight reservations are booked using CRS's. Unlike the telephone, however, CRS's, are controlled by competitors of the airlines forced to use them. It is the airline's ownership of CRS's that raises antitrust questions.

III. Antitrust Problems with the CRS Industry

The practices of the CRS industry raise the question whether existing conditions are the result of violations of antitrust law rather than competitive forces. To answer this the industry must be evaluated under existing antitrust case law and commentary. First, however, a brief overview of applicable law may prove helpful.

Section 2 of the Sherman Antitrust Act makes it unlawful to monopolize or attempt to monopolize. A firm violates Section 2 if it possesses monopoly power and in some way uses or maintains that power to the detriment of free competition. Thus there are two elements of a violation, a finding of monopoly power, and a showing of deliberateness on the part of the monopoly. Monopoly power is the power to control prices or exclude competi-

59 Competitive Marketing Investigation, supra note 53, at 5.
60 15 U.S.C. § 1381 (1980). "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States . . . shall be deemed guilty of a felony . . . ." Id.
tion from the relevant market. The courts are divided as to what is required to establish deliberateness. Because intent can be inferred from a defendant's actions, however, this second element is relatively easy to prove.

A. Monopoly Power

The analysis most consistently followed in determining monopoly power is the structural analysis which Judge Learned Hand developed in United States v. Aluminum Co. of America (ALCOA). The analysis consists of two parts. First, the market in which the monopoly exists must be defined. This involves defining both the product market and the geographic market. The second part of the ALCOA analysis uses the market definitions and looks at the magnitude of a firm's power in the market. The major indicant relied upon in making this determination is market concentration. Often, however, concentration is not conclusive. In these situations the courts will look to other factors which effect the extent to which concentration percentages represent market power. Other factors relied upon include entry barriers, industry structure,
pricing conduct, profits, and other types of performance analysis. In this way a court determines the extent of a firm's monopoly power.

Market Definition and Concentration

The product market is the area of goods in which the monopoly's product competes. The definition necessarily includes those products considered to be substitutes. The relevant product market for the CRS industry has been called the "air transportation computer reservation services" market. The CRS owners sell an information distribution system, and the two-way distribution of information between travel agents and airlines constitutes the market's transactions. For the travel agent, the productivity and efficiency provided by a CRS are essential. The previous distribution system, the only other option, is in no way a substitute given the assumption that most agents will wish to maintain their present volume. Thus CRS's compete solely with multiple-access, two-way, computer systems providing both information and ticketing capabilities. This is the relevant product market.

73 Sullivan, supra note 61, at §§ 28-29.
74 Id. at § 27.
75 Von Kalinowski, supra note 63, at § 8.02(3)(c)(ii); Sullivan, supra note 61, at §§ 26-32.
77 Von Kawlinoski, supra note 63, at § 8.02(2)(a). There are two optional tests; reasonable interchangeability of use and cross-elasticity of demand. The former looks to the purposes and physical characteristics of the different products. If two products are the same in the important characteristics and can perform the same basic functions, then they can be regarded as substitutes. The second test examines the relationship of the products' price to consumer preference. Basically, if an increase in the price of one product will cause consumers to purchase a second product instead, then there is cross-elasticity of demand and the products are substitutes. The degree to which either test is satisfied will be the deciding factor in finding two products to be substitutes. Id.
79 49 Fed. Reg. at 32,544. In the CAB rulemaking, American and United argued that the product was "airline ticket distribution services." In reality though, the most important service offered by a CRS is its information, thus the product definition must be the narrower "computer reservation services." Id.
The relevant geographic market is the area of effective competition in which competing firms operate. The relevant geographic market definition for the CRS industry is complicated, having both regional and national characteristics. The more plausible definition, however, is a regional one.

Though a single CRS may compete throughout the nation, making the market national, there arises a strong correlation, however, between areas where a CRS vendor offers a large number of flights and areas where the majority of its CRS's are sold. Using the Dallas-Fort Worth area as an example, American is the dominant carrier and its CRS, SABRE, has 280 agent subscribers accounting for eighty-eight percent of travel agent sales revenue in the region. United, which operates no flights in the area, has only four agent subscribers accounting for one percent of sales revenue. These facts lend support to a regional market definition. In addition, CRS vendors do not even attempt to sell their systems in areas where they do not have substantial air traffic activity, requiring at least the prospect of high sales volume before allowing an agency to subscribe. Subscribing carriers view the geographic market as regional as well. Under a hub and spoke system, subscribing carriers will only desire access to the CRS system in operation in the regional areas in

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81 von KALINOWSKI, supra note 63, at § 8.02[b][b].
83 Id.
84 Id.
85 Id. In Denver, where the situation is reversed, United's APOLLO is responsible for the majority of travel agent sales revenue. Id.
86 Id.
87 Id. Most airlines operate on a hub and spoke system. The structure involves the use of a central airport from which the majority of a carrier's flights will emanate. The flights radiate outward from the "hub" to other cities where passengers can transfer to or from the "spokes" of other systems. For most carriers, these hub and spoke systems are decidedly regional, thus when a carrier sells its CRS in its principal area of operations it is selling in a limited region of the country. Id.
which they concentrate their air traffic.\footnote{Id.} Therefore, as both CRS owners and subscribers view the CRS market as regional, for analytical purposes the relevant market definition should be regional as well.

Confusingly, many traditional factors used to determine geographic market definitions lend support to a national definition. A firm's approach to business planning and operations has been cited as a factor in defining the geographic market.\footnote{Id. at 566-70.} In United States v. Grinnell Corp., a national alarm services provider utilized regionally operated, affiliate stations for distribution.\footnote{Id. at 575-76.} The Supreme Court held that since there was national planning and operation, the local nature of the individual stations was irrelevant for analytical purposes.\footnote{Hearings, supra note 5, at 40.} All CRS vendors are able, and usually willing, to sell their systems anywhere in the nation.\footnote{See supra, notes 83 - 88 and accompanying text.} Since correlation between air service and CRS presence\footnote{Hearings, supra note 5, at 40.} is significant, as CRS hosts expand their routes their market presence will increase nationwide as well.\footnote{SULLIVAN, supra note 61, at 68.} Because a distinct market exists when the sellers make pricing and output decisions without regard to sellers elsewhere,\footnote{Case-Swayne Co. v. Sunkist Growers, Inc., 369 F.2d 449 (9th Cir. 1966) (held that the orange products market was nationwide and was tied to the "product orange" supply, but that regional product orange submarkets exist in commercial reality and for antitrust purposes).} the market characteristics associated with a regional definition may disappear at a later date.

At least one court has taken the approach of identifying submarkets in antitrust analysis.\footnote{Id.} In Case-Swayne Co. v. Sunkist Growers, Inc.,\footnote{Id. at 566-70.} the Ninth Circuit held that while in

\footnotetext{88}{Id.}\footnotetext{89}{United States v. Grinnell Corp., 384 U.S. 563, 574-76 (1966) (defining the market so as to reflect "the reality of the way in which they built and conducted their business").}\footnotetext{90}{Id. at 566-70.}\footnotetext{91}{Id. at 575-76.}\footnotext{92}{Hearings, supra note 5, at 40.}\footnotetext{93}{See supra, notes 83 - 88 and accompanying text.}\footnotetext{94}{Hearings, supra note 5, at 40.}\footnotetext{95}{SULLIVAN, supra note 61, at 68.}\footnotetext{96}{Case-Swayne Co. v. Sunkist Growers, Inc., 369 F.2d 449 (9th Cir. 1966) (held that the orange products market was nationwide and was tied to the "product orange" supply, but that regional product orange submarkets exist in commercial reality and for antitrust purposes).}\footnotetext{97}{Id.}
many respects a market may be national, a court can, for antitrust purposes, look to relevant submarkets for market definitions. The court further held that market definitions should reflect the "geographic structure of supplier-customer relations" and must "correspond to the commercial realities of the industry." This approach would find regional submarkets for CRS services because of the relation of air transportation presence to CRS use. CRS vendors sell to customers who have limited, regional operations. Futhermore, a look at market concentration statistics of CRS owners in relation to their air traffic presence shows that in reality the CRS geographic market is regional. The significance of this assertion for measuring monopoly power can be seen from examining market concentration percentages.

Using a national market definition, the market shares for CRS vendors are relatively low. For example, forty-one percent of all automated travel agencies use American's SABRE, accounting for forty-nine percent of CRS-generated revenue. For United's APOLLO, the figures were twenty-eight percent and thirty-one percent respectively. While significant, the numbers fall far short of market percentages cited as evidence of a monopoly. The fifty to sixty percent range is usually given as a minimum share for a finding of monopoly power. Thus, a

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98 Id. at 456.
99 Id. at 457 (citing United States v. Philadelphia National Bank, 374 U.S. 321 (1963)).
100 Id. at 456.
101 Id. at 456.
102 VON KALINOWSKI, supra note 63, at § 8.02[3][b].
104 Id. TWA's PARS accounted for sixteen percent of agency subscribers and twelve percent of domestic revenues. Id.
105 VON KALINOWSKI, supra note 63, at § 8.02[3][b]. See id. at n.69 for cases grouped according to the defendants' levels of market concentration. Market percentages as high as seventy-five percent have been held not to be indicative of monopoly power absent other factors. Id.
106 Aluminum Co. of Am., 148 F.2d at 424; Holleb & Co. v. Produce Terminal Cold Storage Co., 532 F.2d 29 (7th Cir. 1976).
national market definition would present a difficult obstacle to finding monopoly power.

Under a regional definition, however, concentration figures change dramatically. Twenty-nine urban areas exist where a CRS accounts for more than a forty percent share of the market, with five areas having CRS market shares of seventy percent or more. Some of these market concentrations would satisfy the concentration requirements laid out by the courts, but for the most part even the higher concentrations in the regional markets would not alone be sufficient evidence of monopoly power. High concentration is almost never conclusive evidence of monopoly. Other factors, however, may show that CRS vendors have greater market power than their regional shares indicate.

**Entry Barriers and Industry Structure**

The examination of other relevant factors is necessary to place market concentration statistics in context. It is well settled that the "relative effect of percentage command of a market varies with the setting in which the factor is placed." For example, a firm with a very high market share will not possess market power if new firms could readily enter the market. In this situation, a dominant firm cannot substantially raise prices or restrict output, the very definition of monopoly power. For these reasons, entry barriers are considered "crucial" factors in

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106 49 Fed. Reg. at 11,649. The statistics are from a Department of Justice study. The study was based on urban markets with at least $100 million of annual revenue. The percentages refer to travel agent subscribers of CRS's. Id.

107 United States v. Aluminum Co. of Am., 148 F.2d at 424.

108 VON KALINOWSKI, supra note 63, at 8-34.2. Only percentages of eighty or more have alone been held to be indicative of monopoly power. Id.


110 SULLIVAN, supra note 61, at 77. Conversely, a firm with less than a fifty percent share may have the power to expand or utilize its relative economies of scale against remaining smaller firms or firms wishing to enter. Unique resources or methods, economies of scale, or other barriers may be such that the firm can control the industry without fear of competition from new firms or other smaller firms. Id.
any evaluation of market power.\textsuperscript{111}

There are numerous obstacles for new firms in the CRS industry which could be held to be market entry barriers. One major barrier is capital costs. Estimates vary, but the lowest estimate for initial capital expenditures to develop a new system is $100 million.\textsuperscript{112} American's President, Robert L. Crandell, claims that American's SABRE is the most enormous, sophisticated, and complex computer system in the world.\textsuperscript{113} It is unclear in light of the rapidly advancing level of computer technology, with the related decrease in costs, what would actually be required today. In any case, the amount would be enormous. Another aspect of these costs is that there is no salvage value for used equipment because of the specialized nature of the equipment.\textsuperscript{114} Additionally, there are efficiencies to be gained from operation on a large scale because of high fixed costs.\textsuperscript{115} New entrants would need to enter with a fairly large share of the market in order to avoid sustaining large losses.\textsuperscript{116} Another cost is development time. CRS's require programmers to work with the database. A training program for these specialized technicians normally takes six months to two years.\textsuperscript{117} Furthermore, the special features of the major CRS's, seen as essential for effective competition, would take additional time.\textsuperscript{118} The nature of the industry complicates the analysis. Since computer technology changes daily and the CRS industry

\textsuperscript{111} Id. at 77.

\textsuperscript{112} 49 Fed. Reg. at 11,650. The estimate is the Justice Department's. United reported to the CAB for purpose of the CAB's investigation that it spent $500 million on APOLLO over the years of its operation. American reported development costs of $160 million. Id.


\textsuperscript{114} 49 Fed. Reg. at 11,650.

\textsuperscript{115} 3 AREEDA AND TURNER, ANTITRUST LAW, at 49 (1978).

\textsuperscript{116} 49 Fed. Reg. at 11,650.

\textsuperscript{117} Id. The programmers would have to be trained because of a shortage of experienced programmers familiar with the problems peculiar to the CRS industry. Id.

\textsuperscript{118} Id.
is so young, it is hard to predict whether costs will remain so high. Recent scientific advances and marketing features can already be seen aiding newer entrants.

Consumer preferences also act to bar market entry. Travel agents desire the special features of systems like SABRE and APOLLO, such as bookkeeping, car rentals, and boarding passes. A new entrant would have to match these to compete. Travel agents also prefer to use the system of the major carrier in the area. Travel agents gain more direct communication, higher commissions, and better business relationships by using the CRS of the dominant carrier in the area.

In general, converting travel agents from one system to another presents a substantial entry barrier. Agents’ leases are uniformly long and the standard lease includes a liquidated damages clause in the event of cancellation. The leases also prohibit the use of two different CRS’s simultaneously. Aside from the contract terms, agents will also be reluctant to switch to a new system because of their familiarity with the old system. For an agent to use a new system, he or she would need to stop work and undergo a complete retraining program. In general, agents’ loyalty to their favorite carrier creates a conversion problem. The marketing policies of the major CRS’s have directly caused the conversion problems. Together these restraints constitute a significant barrier to entry.

Probably the most significant barrier to entry is the im-

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119 Hearings, supra note 5, at 108.
120 Id. An example of a new marketing feature can be found in Delta’s DATAS II, which offers “unbiased” access. Id.
122 Hearings, supra note 5, at 107.
123 49 Fed. Reg. at 11,651. In APOLLO contracts, the liquidated damages clause requires the agent to pay eighty percent of the remaining rentals due. Id.
124 Id. at 11,651-52. See generally supra notes 36, 37 and accompanying text for a more detailed discussion of lease terms.
125 49 Fed. Reg. at 11,652. One study found that most agents did not “express even the slightest interest in switching systems.” Id.
126 Id.
importance of incremental revenues to the profitability of CRS's. Incremental revenues are the added revenues gained from slight increases in load factors, the percentage of occupied seats on a flight.\textsuperscript{127} Once a flight has enough passengers to recover its fixed costs, revenue from additional passengers is mostly profit because the costs per each additional passenger constitute only a portion of the fare.\textsuperscript{128} The added profit from incremental revenues provides the major source of revenue for CRS owners.\textsuperscript{129} CRS vendors in high volume areas have significantly increased their load factors and their profits.\textsuperscript{130} The use of CRS's to accomplish this will be discussed later, but clearly, a market entrant must be able to generate this type of revenue.

Charging agents and carriers on the basis of system cost would price the new entrant out of the market.\textsuperscript{131} Tymshare, Inc.'s MARS PLUS system offers an example of this problem.\textsuperscript{132} Because Tymshare does not provide air transportation it does not realize incremental revenues. MARS PLUS admits a substantial disadvantage vis-a-vis carrier-owned systems because it must recover its costs directly from travel agents.\textsuperscript{133} The importance of incremental revenues is demonstrated by CRS vendors' marketing policies, policies which place most of the emphasis on incremental revenues as a revenue source.\textsuperscript{134} This emphasis has proven effective. American's proceeds related to incremental revenues generated by CRS ownership topped $150 million, while United's topped $160 million.\textsuperscript{135} The

\textsuperscript{127} 49 Fed. Reg. at 11,652. Costs per flight are fixed, profits are realized only when the load factor is above a certain "breakeven" point. \textit{Id.} Obviously, airlines strive to increase their load factors.

\textsuperscript{128} \textit{Id.}

\textsuperscript{129} \textit{Id.} In-house estimates of various airlines reveal that as much as eighty percent of incremental revenue is profit. \textit{Id.}

\textsuperscript{130} \textit{Id.}

\textsuperscript{131} \textit{Id.} at 11,653.

\textsuperscript{132} \textit{Hearings, supra} note 5, at 60-61.

\textsuperscript{133} \textit{Id.} at 61.

\textsuperscript{134} 49 Fed. Reg. at 11,650. The two other sources of revenue are charges to travel agent subscribers and charges to carriers for CRS access. \textit{Id.}

\textsuperscript{135} \textit{Id.}
power of CRS vendors to control price and access is directly attributable to incremental revenues.

Other structural aspects of an industry can affect the market power associated with particular market shares. The future prospects for an industry are one such factor. In expanding industries market shares have less significance. This situation currently exists in the CRS industry, with the number of agent subscribers increasing from 4,000 in 1980 to over 17,000 today. Both Delta Air Lines and Eastern Airlines have been able to enter the CRS market, but with only mixed results, capturing only insignificant market shares. Their entry takes little of the force away from the data showing high entry barriers.

The magnitude and number of entry barriers increases the significance of measured market shares. Where entry barriers are present, figures as high as eighty percent or more might be held conclusive evidence of monopoly power. Regional shares between fifty and eighty percent would strongly indicate monopoly power. Both American and United could be violating the Sherman Act in a number of their regional markets based solely on the factors discussed thus far.

Performance Analysis

Structural analysis has become a central focal point in most antitrust cases. Performance criteria becomes equally important in many cases. Performance analysis involves empirical comparison of a monopolistic industry with a competitive industry. To the extent that the data shows price, profits, and other performance criteria which favor the monopolist, inferences about monopoly power

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137 Hearings, supra note 5, at 108.

138 49 Fed. Reg. at 11,649. Delta and Eastern together account for only seven percent of all subscribers.

139 Von Kalinowski, supra note 63, at § 8.02[3][b].

140 Id.
can be drawn from the analysis.\textsuperscript{141}

Applying the analysis to the CRS industry, pricing conduct and profit performance represent two areas where the CRS industry deviates from the norm. One hallmark of monopoly power is the ability to raise or lower prices without concern for competitors, especially when price bears no relation to cost.\textsuperscript{142} This ability exists in the CRS industry. A number of carriers have complained that the booking fees charged by the major airlines bear no relation to cost. For instance, fees far exceed costs incurred in leasing in-house systems.\textsuperscript{143} The fees also exceed those charged by the minor CRS vendors.\textsuperscript{144} Another aspect of most booking fees is that a particular carrier’s fees will vary directly with the magnitude of that carrier’s competitive threat.\textsuperscript{145} Thus the most competitive carrier must pay the highest fee. If carriers’ complaints are valid, strong inferences of monopoly power can be made.

Abnormally high profits infer monopoly power and are evidence of market power.\textsuperscript{146} The profits and returns on CRS investments are extremely high.\textsuperscript{147} The return on investment for a CRS ranges from twenty-four percent to ninety-five percent.\textsuperscript{148} Unfortunately, the analytical inconsistencies associated with performance analysis in general apply to the measurement of profits.\textsuperscript{149} For instance, if profits were measured on the basis of cash payments,

\begin{itemize}
\item \textsuperscript{141} SULLIVAN, supra note 61, at 82-83. Performance analysis is often criticized for being inherently inaccurate. \textit{Id.} at 83. Its main benefit seems to be as a supplement to structural analysis. \textit{Id.}
\item \textsuperscript{142} \textit{Id.}
\item \textsuperscript{143} \textit{Hearings, supra note 5, at 83.}
\item \textsuperscript{144} \textit{Id.}
\item \textsuperscript{145} \textit{Hearings, supra note 5, at 83-84.}
\item \textsuperscript{146} SULLIVAN, supra note 61, at 85.
\item \textsuperscript{147} 49 Fed. Reg. at 11,650. The profit figures for the most part are based on incremental revenues. The major CRS owners argue that incremental revenues should not be included in profit measurement. At the same time though both major CRS’s are acutely aware of the importance of incremental revenues. Returns on investment can be as high as ninety-five percent with payback periods of only one year. \textit{Id.}
\item \textsuperscript{148} \textit{Id.}
\item \textsuperscript{149} SULLIVAN, supra note 61, at 83.
\end{itemize}
rather than including profits from incremental revenues, the figures would be considerably lower.\textsuperscript{150} Certainly a more extensive fact finding would be required in order to make any conclusions about CRS profits and monopoly power.

In reviewing factors used to measure market power, the market characteristics and performance of the CRS industry give no definitive answer to the monopoly question. The evidence available at present suggests that monopoly power exists in the CRS industry. Viewing market shares of the major CRS vendors on a regional basis with the additional considerations of substantial entry barriers and performance suggestive of monopoly power, market power appears much greater than market shares initially indicate. In areas with high concentration, a finding of monopoly power could be justified. If such a finding is accepted, the next step is to examine conduct in the market to determine whether monopoly power is being used or maintained, thereby satisfying the second element of the Sherman Act prohibition against monopolization.

B. Conduct Analysis

The second major part of an antitrust analysis under the Sherman Act involves ascertaining whether a firm with monopoly power has used that power unlawfully.\textsuperscript{151} A court must find a "purpose or intent" to exercise monopoly power to impede competition or exclude competitors.\textsuperscript{152} Three tests exist by which conduct may be evaluated. The first test examines whether the firm deliberately sought to acquire monopoly power.\textsuperscript{153} The second test examines whether the firm maintained a monopoly by predatory or exclusionary practices.\textsuperscript{154} The

\textsuperscript{150} 49 Fed. Reg. at 32,545.
\textsuperscript{151} SULLIVAN, supra note 61, at 94.
\textsuperscript{152} United States v. Griffith, 334 U.S. 100, 107 (1948).
\textsuperscript{153} See generally, United States v. Aluminum Co. of Am., 148 F.2d 416 (2d Cir. 1945).
third test establishes a prima facie case of monopolization following a finding of monopoly power, but allows the firm to prove the monopoly was innocently acquired or maintained. Present case law is unclear as to which test should be applied, yet the law clearly encompasses at least the second test and probably requires some showing of intent. For purposes of this discussion, however, detailed analysis similar to an antitrust case will not be possible. Nonetheless, an understanding of the anticompetitive problems of the CRS industry may be reached by analogizing between conduct of CRS owners and conduct that has been held to satisfy the intent requirement.

Increasing Entry Barriers

One type of conduct held to violate Section 2 consists of activity which tends to increase existing barriers to entry in an industry. Increasing entry barriers changes market structure into a less competitive form by reducing the threat of new entry or expansion. In effect, market shares, though fixed, will represent more power. There are numerous instances of practices designed to increase entry barriers. CRS vendors’ use of increasingly restrictive lease contracts, with ‘exclusivity of system’ and liquidated damage provisions, presents the new entrant with agent conversion problems. To achieve needed economies of scale, the new entrant must convert agents because only ten percent of all agents are not presently under contract. Though the number of newly automated agencies is growing, the current trend toward

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155 SULLIVAN, supra note 61, at 37.
156 United Shoe, 110 F. Supp. at 295.
157 See supra notes 109 - 147 and accompanying text for a discussion of entry barriers.
158 See supra notes 123 - 126 and accompanying text.
159 49 Fed. Reg. at 11,650.
160 Hearings, supra note 5, at 108.
161 49 Fed. Reg. at 11,655. The ten percent figure refers to revenue. Only ten percent of agent revenue is not generated under a CRS contract. Id.
longer lease terms by United and American only decreases the chance that a new entrant will be able to convert agencies.

The increasing reliance of the major carriers on incremental revenues to recover costs also acts to increase entry barriers. Because CRS vendors can use incremental revenues to reduce subscription costs to agents, new entrants must have the ability to generate incremental revenues as well. Since these types of revenues are a direct result of air transportation presence, most new entrants will not be in the position to generate incremental revenue. The lackluster success of the only recent entrants, Delta and Eastern, may be traced, among other things, to their inability to generate sufficient revenue in this way.

Increasing the complexity and number of various optional and standard features, such as advance boarding pass capabilities, constitutes another example of conduct designed to increase entry barriers. A new entrant must match each new option to compete effectively. Each option increases both the cost and time required for system development, making new entry unattractive.

Unlawful Exercises of Monopoly Power

Monopolistic conduct need not be aimed solely at increasing or maintaining monopoly power. Conduct which does not directly reduce competition in the industry may nonetheless be unlawful to the extent that it reduces competition in a related industry or is predatory in nature. There exist three types of conduct in the CRS industry

162 *Hearings, supra* note 5, at 103.

163 *Id.*

164 49 Fed. Reg. at 11,650. One factor in Eastern's lack of market penetration has been its failure to offer an accounting package option with its system. Thus, its sales are limited to smaller agencies who do not require such an option. *Id.*

165 *SULLIVAN, supra* note 61, at 46-48. The basic purpose of the Sherman Act is to increase competition. The assumption is that competition benefits society. Thus it prohibits predatory behavior and less serious conduct that inhibits competition. *Id.*
which qualify: discriminatory pricing, system bias, and discriminatory selection.

1. **Pricing Conduct**

Discriminatory pricing policies are seen as evidence of monopoly power and an unlawful exercise of that power.\(^\text{166}\) CRS vendors discriminate in the prices charged non-host carriers for access to the system.\(^\text{167}\) The costs to include a carrier in a CRS database are relatively fixed.\(^\text{168}\) Yet charges to carriers vary, from twenty-five cents per booking to three dollars per booking.\(^\text{169}\) Many carriers allege that the fees charged vary directly with the subscribing carrier’s competitive threat, and are used to decrease the profitability of discount carriers.\(^\text{170}\) Some carriers can negotiate the fees because of their air transportation presence in a given market.\(^\text{171}\) A CRS would not be marketable if it excluded all of the flights of a major carrier. In addition to prices, net ticketing agreements, referred to earlier,\(^\text{172}\) also stem from a CRS vendor’s ability to dictate terms.\(^\text{173}\)

2. **System Bias**

System bias constitutes by far the most serious abuse committed by CRS vendors. System bias consists of altering the display shown on an agent’s terminal so what seems like objective flight information in fact favors the CRS vendor’s flights.\(^\text{174}\) There are three different types of bias: screen bias, connecting point bias, and database bias. CRS vendors use bias to increase the number of

\(^{166}\) Id. at 121.

\(^{167}\) Hearings, supra note 5, at 81.

\(^{168}\) Id. at 83.

\(^{169}\) Id. at 82.

\(^{170}\) Id. at 83, 84.

\(^{171}\) Id. at 84.

\(^{172}\) See supra notes 44-47 and accompanying text.

\(^{173}\) Id.

\(^{174}\) Hearings, supra note 5, at 66-77. See also supra notes 21-32 and accompanying text.
bookings made through their CRS that result in passengers on their flights. The air transportation industry has three levels: air transportation services, reservation information distribution, and air transportation sales. Carrier-owned CRS's represent vertical integration of the first two levels. Bias involves the use of CRS vendor's position on the second level (information distribution) to affect competition at the first level (transportation). Thus bias has obvious antitrust implications.

The major type of bias, and the one most vehemently attacked, is screen bias. Not all applicable information pertaining to a consumer's flight request can be shown to the agent on one screen because of the physical limitations of a CRS terminal. In most screen formats, four to ten flights can be shown at one time. Obviously, a well-traveled route could generate four or five screens of information. The problem arises when travel agents do not search all the screens. In theory, an agent will be thorough. In practice, however, most agents book the first suitable flight that appears. Seventy to ninety percent of all bookings are made off the first screen, fifty percent off the first line. Consequently, CRS vendors have a great incentive to ensure that, as often as possible, their flights will appear before others, thereby increasing incre-

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175 49 Fed. Reg. at 11,646. "[Information distribution] is the level at which consumers actually purchase air transportation services." Id.
176 Vertical integration is the combination of two levels of an industry under one firm's management. From original production to final sale, an industry has a number of levels of activity. When one firm operates simultaneously on one level and the adjacent level in the chains it is said to be vertically integrated. SULLIVAN, supra note 61, at § 57.
177 Cohen, supra note 78, at 152.
178 Hearings, supra note 5, at 66-77. All systems have a built-in "structural bias." Id. at 68. The information selected by the system to be transferred from the database to the terminal is chosen using parameters. For example, on one system a flight between two cities may be shown based on the preferred departure time inputed by the agent. Another system may use a combination of the departure time and the number of connections involved. Structural bias exists in any system and is unavoidable. It is argued, however, that even the choice of structural bias is competitively motivated. Id.
179 Id. at 67.
180 Id.
mental revenues. By using selected criteria, vendors can program their CRS's to list flights in this manner.

Systems can be programmed, or biased, so that flights of a certain carrier appear before all others. The CRS's enhance this effect by designating criteria that will also favor their flights, such as programming the system to prefer wide body jets to smaller ones and multi-class service over uniform service. One blatant example of screen bias occurs when a competing carrier has a departure or arrival time that matches a consumer's needs and the CRS vendor does not. The CRS vendor will place its flight that approximates the requested time ahead of a rival's that matches exactly. An agent will book the "less desirable" flight, despite knowledge of the bias, because a complete search costs the agent more in terms of money and time. Overall, screen bias favors the CRS vendor's flights over the other carriers', robbing the latter of the fares of incremental passengers, a crucial element of profitability in the airline industry.

The second type of bias, connecting point bias, selects favorable connecting points for flights with intermediate stops. All flights involving connections use a certain airport as a connecting point. In constructing their flight systems, carriers designate and develop particular airports as connecting points. Since a system cannot include all possible connections, most CRS's picked a limited number of connecting points as a start. The problem comes from the resulting exclusion of the flights of a carrier who does not use one of the CRS designated points as its connecting point. Utilizing this situation,

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182 Id.
183 Hearings, supra note 5, at 68.
184 Id.
185 Id.
187 Hearings, supra note 5, at 73-74.
188 Id. at 73.
189 Id.
190 Id.
host carriers design their systems to choose their major connection bases as connecting points and ignore those of competing carriers. In addition, for each connecting point, host carrier's CRS's still favor their flights over other carriers' flights with the same connections. Connecting point bias concerns carriers as much as screen bias. Screen bias can be overcome by an agent requesting additional screens, but connecting point bias is virtually undetectable and relatively unknown to agents.

The third type of bias, database bias, is not so much a manipulation of information as it is a withholding. Database bias refers to the problem of inaccurate and tardy information processing. All reservation information must be fed into the database by the CRS owner. Thus the owner is at liberty to withhold information at will. The ability to dictate the input of information has been abused by CRS vendors in a number of ways: delaying input of information on fares, especially where a competitor's new low fare is involved; omitting or misstating flight information for routes used by the CRS owner's flights; displaying available flights as full; and neglecting to discontinue a competitor's low fare offer so that extra, but unwanted, low fare passengers are added. These abuses have the same impact on carriers as the complete denial of access to a CRS, but like connecting point bias, they are difficult to discover.

Customer Selection and the Essential Facility Doctrine

Discriminatory selection in the CRS industry closely resembles a recognized doctrine of antitrust law, the "es-

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191 Id. at 74.
192 Id.
193 Id. at 73.
194 Id. at 89.
195 Id. at 90. Abuses such as the ones mentioned were involved in the investigation into the Braniff bankruptcy. Id.
196 Id. at 91. All the aforementioned practices are disputed by CRS owners, who claim they are the result of unintentional loading errors. Id.
sential facility” doctrine. The premise of the doctrine is that when a vertically integrated monopolist controls a nonduplicable resource at one level that is essential to competition in a second level, it must offer the resource to all on the same terms. The Supreme Court first recognized the doctrine in United States v. St. Louis Terminal Railroad Association. It has been followed and defined in other cases, remaining a viable doctrine despite scholarly criticism.

United States v. St. Louis Terminal Railroad Association, the principle case advocating the essential facility doctrine, involved the control of the railroad terminal system in St. Louis by a single holding company comprised of a number of railroads. The geography of St. Louis forced any continuous railroad line to utilize one of three river crossings. The holding company in Terminal Railroad bought the three independent terminals providing through routes, and began to prefer its member railroads over others in the use of the terminals. The Court considered the discriminatory treatment a restraint of trade and required the holding company to act as an impartial provider of services.

Another major case, Otter Tail Power Co. v. United States, concerned a public utility. The Otter Tail Power Company was the only electric company that could provide towns in its area with wholesale electric power.

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198 Id. at 992. “[I]t is sufficient if duplication of the facility would be economically infeasible . . . .” Id.
200 224 U.S. 383 (1912).
201 Areeda & Turner, supra note 115, at ¶779g.
202 224 U.S. 383 (1912).
203 Id. at 394.
204 Id. at 395.
205 Id.
206 Id. at 410.
208 Id. at 370. This applied to both direct supply and indirect supply by means of “wheeling,” transferring power from other suppliers. Id.
The towns in question needed the wholesale power in order to establish their own municipal systems. These systems' power would eventually replace Otter Tail's retail sales. Because of the threat of lost retail sales, Otter Tail refused to sell wholesale power to towns proposing municipal systems, thus defeating their plans and insuring future retail sales. The Supreme Court affirmed the lower court's finding of a Sherman Act violation, classifying Otter Tail's refusals as the use of monopoly power in one market to increase market power in another and therefore a restraint of trade. The First Circuit in Gamco, Inc. v. Providence Fruit & Produce Building also invoked the rule of Terminal R.R. The defendant owned the building preferred by the produce market. Retail buyers were accustomed to shopping there. Attempted alternative sites had failed. For these reasons, the court considered the defendant's building an essential facility for the local produce market and held that when a firm with both the power and motive to exclude does so without economic justification, there is prima facie proof of intent to monopolize.

From a reading of the cases, certain distinct elements exist which must be established for a monopolist's exclusionary and predatory practices in a related market to be held a violation of the Sherman Act. First, there must be a vertically integrated monopolist. Next, the monopolist must have control or access to some resource or facility

209 Id. at 369-71.
210 Id. at 377. The Court cited United States v. Griffith, 334 U.S. 100 (1948), as authority for the holding.
211 410 U.S. at 382.
212 194 F.2d 484 (1st Cir. 1952).
213 Id. at 486.
214 Id. at 487.
215 Id. at 488.
216 Id. Other cases involving the essential facility doctrine and the holding in Terminal R.R., 224 U.S. 383 (1912), are Hecht v. Pro-Football, 470 F.2d 982 (D.C. Cir. 1977), LaPeyre v. F.T.C., 366 F.2d 117 (5th Cir. 1966), Associated Press v. United States, 326 U.S. 1 (1945); compare McQuade Tours Inc. v. Consolidated Air Tour Manual Comm., 467 F.2d 178 (5th Cir. 1972), cert. denied, 409 U.S. 1109 (1973), and Official Airline Guides v. F.T.C., 630 F.2d 920 (2d Cir. 1980).
not commonly enjoyed or available to competitors at the second level. The facility or resource must be indispensa-
ble to firms in that second level. Indispensable, however,
means only that denying a firm its use would create severe economic hardships. In addition, the facility need not be completely unique or nonduplicative. It is sufficient if the realities of the industry are such that competitors, and especially new entrants, cannot possibly duplicate it economically or in the time needed for effective competition. The final requirement is that the monopolist, having offered the resource to buyers, then discriminates among buyers on some basis other than justifiable economic considerations.

The CRS industry encompasses most of the above mentioned elements. CRS's are facilities essential to air transportation sales. Most airlines and agents agree that access to a CRS is not only important but has no effective substitutes.\textsuperscript{217} Unlike the cited cases, however, there is no one central facility.\textsuperscript{218} In the CRS industry, at least three CRS's possess large numbers of agent subscribers.\textsuperscript{219} But CRS's are not like railroad terminals because access to one is not necessarily enough. Evidence suggests that in areas when two CRS's have large market shares, a carrier must have access to both.\textsuperscript{220} Only in this way will the carrier reach a large number of automated agents.\textsuperscript{221} So for the individual non-host carriers, the existence of more than one "facility" in no way makes a single CRS less indispensable.

CRS's are not easily duplicated. As established when discussing entry barriers, CRS's require huge capital outlays and a considerable amount of development time.\textsuperscript{222} Recent CRS entrants Delta and Eastern have barely been able to establish themselves, despite their strength in the
air transportation market and a developed in-house system. They have not duplicated the major CRS's and still must buy access to those systems. If we assume that CRS owners are vertically integrated, the remaining element needed is discriminatory treatment of the buyer. In the CRS industry this is well documented. CRS owners charge carriers access fees that vary over a large range. Carriers that are in direct competition for passengers with CRS vendors are often faced with higher fees or even denied access completely. With regard to flight data there is unequal treatment as well. Again, competing carriers' data is subject to misstatement and delayed loading. In addition, bias is usually directed towards the most competitive carriers, resulting in fewer bookings and profits while increasing the same for the vendor.

In sum, the CRS industry’s characteristics fit those characteristics of other situations where the essential facility doctrine has been invoked. Accordingly, a court would be justified in requiring CRS owners to offer access to their systems on an equal basis. In the CRS industry, however, the defendants are different. In many of the cited cases, the defendant was an association of more than one entity; in Terminal, a group of railroads; in Associated Press, a group of newspapers; in Hecht, a group of football teams; and in Gameco, a jointly owned building.

223 Hearings, supra note 5, at 544 (statement of Robert L. Crandell, President of American Airlines).
224 See supra notes 112-138 and accompanying text.
225 Cohen, supra note 78, at 153.
226 Hearings, supra note 5, at 81-88.
227 Id.
228 Id.
229 Id.
230 See supra notes 231-234.
231 224 U.S. 383 (1912).
233 570 F.2d 982 (D.C. Cir. 1977).
234 194 F.2d 484 (1st Cir. 1952).
While some cases note this aspect, it is not stressed as an important factor. Since the basis of the doctrine is to prohibit the use of monopoly power in other markets by a vertically integrated monopolist, it would not seem to matter whether the monopolist is a single entity or an association.

IV. CAB Rulemaking

After numerous complaints from carriers and a congressional investigation, the House Subcommittee on Aviation directed the CAB to investigate the CRS problem and take whatever action was deemed necessary. The primary motive of the Subcommittee was to have the CAB adopt interim measures to protect carriers and air transportation consumers while the Justice Department investigated the legal options. Based on the recommendations from the Justice Department, the CAB proceeded with the rulemaking. The rule’s application

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236 Hearings, supra note 5, at 716 (letter of July 15, 1983, from Norman Y. Mineta, Chairman, Subcommittee on Aviation, to Dan McKinnon, Chairman, CAB). The Federal Aviation Act of 1958, section 411, granted the CAB the power to investigate problems and issue orders whenever it found “unfair or deceptive practices or unfair methods of competition.” Pub. L. No. 85-726, Title IV, § 411, 72 Stat. 769 (codified at 49 U.S.C. § 1381 (Supp. 1984-85)). The power is broad and includes the ability to address “any practice that destroys competition and establishes a monopoly.” 49 Fed. Reg. at 32,541. The CAB based its conclusion on its view that its Section 411 was similar in scope to the Federal Trade Commission’s (FTC) authority. The actions taken were to be preventive in nature, just as the FTC’s are designed to be. Id. (citing FTC v. Brown Shoe Co., 384 U.S. 316, 321 (1966). “Practices” may include any “which conflict with the basic policies of the Sherman and Clayton Acts even though such practices may not actually violate those laws.” 49 Fed. Reg. at 32,541. See supra note 229. The general purpose of such authority is to prevent anti-competitive practices and avoid the need to resort to the antitrust laws. 49 Fed. Reg. at 32,542. The CAB exercised its authority in August of 1984 and issued a rule, effective November 1984, which seeks to correct the abuses of the CRS owners.

237 Hearings, supra note 5, at 715. “Although an antitrust case may be the best long run solution to the problem, such a case is likely to take years to complete and, if there are no limitations on anti-competitive practices in the interim, there is a threat of irreparable injury to consumers and competitors. . . .” Id.

238 The Justice Department had declined to bring antitrust actions against the CRS vendors. Senate Hearings, supra note 113, at 25 (written statement of Charles F. Dole, Deputy Assistant Attorney General, Antitrust Division, Department of
is limited in scope. Its restrictions are to apply only to carrier-owned CRS's. Thus Tymshare, a system owned by a company unaffiliated with air transportation, is exempted. In exempting CRS's like Tymshare, the CAB believed that both the incentive and the capacity to engage in anti-competitive conduct were missing. The Board was careful, however, to define the term "carrier" broadly so as to include any affiliates. Carrier-owned or controlled companies are included within the scope of the rule. The system itself is defined narrowly. A CRS is defined as a system that offers information and the ability to make reservations and issue tickets. The definition excludes systems that merely offer information. Thus a system that lists flights and fares, but provides no communication with the carrier, would not be subject to the rule.

The main thrust of the rule is to attack anti-competitive display formats. It contains restrictions affecting screen bias, connecting point bias, and database bias. For the first two, the rule prohibits flight ordering based on carrier identity. The criteria for determining the or-

Justice). Litigation was a poor option because it could not provide industry-wide relief, would require several cases in different jurisdictions with possibly different results, would not address abuses of CRS vendors not sued, and would be extremely time consuming. The Department ruled against divestiture as a remedy because of its severity, the possible loss of efficiencies in the CRS market, and the time required for its achievement.

Id. 49 Fed. Reg. at 32,541 (referring to 14 C.F.R. §§ 255.2-.3).

49 Fed. Reg. at 32,548. The difference is incremental revenues. Tymshare and those similarly situated cannot realize such revenue. Since the profitability of incremental revenues is the major factor underlying CRS abuses, the lack of such revenues destroys the incentive to engage in anticompetitive behavior using CRS's. Id. Of special concern was the possibility that a CRS owner could sell its system in return for preferential display treatment. Id.

14 C.F.R. § 255.3 (1984). The major characteristic of a system must possess to be a CRS is two-way communication between the agent and the carrier. 49 Fed. Reg. at 32,548.

See supra notes 178-185 and accompanying text.

See supra notes 186-193 and accompanying text.

See supra notes 194-196 and accompanying text.

14 C.F.R. § 255.4.
order of the flight listings for a given departure time must be based on service-related factors and be applied uniformly to all carriers including the CRS owner. The same type of restriction applies to the criteria for selecting connecting points used in displaying connecting flights. The effect of these restrictions is to eliminate the preferential listing of flights due to CRS ownership or co-host agreements. To correct database bias, the rule requires CRS vendors to treat the data of all its subscribers equally. The information loading procedure and the timing of the loading must be substantially the same as if the data were the vendors' own. Any direct computer links offered to co-hosts must be offered to all buyers on nondiscriminatory terms. The bias restrictions do not apply, however, to treatment of carriers that refuse to pay a nondiscriminatory access fee.

The rule also restricts contract terms for carriers and agents. Carrier contracts may not discriminate among carriers in the fees charged for similar services. The rule also prohibits contract provisions such as net ticketing agreements. Agent contracts may not be for terms longer than five years. The contract cannot condition subscription on the use of only one system or require that

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248 Id. § 255.4(b)(1). "[CRS vendors] may order the display of information on the basis of any service criteria." Id. Service criteria might include the size of the plane, the number of classes of cabin service, or special luxury features such as movies. 49 Fed. Reg. at 32,550.

249 14 C.F.R. § 255.4(b)(1). The criteria eventually adopted must be available upon request and the weight given specific factors in ordering information must also be furnished. Id. § 255.5(b)(2).

250 Id. § 255.4(c).

251 Id. § 255.4(d).

252 Id. § 255.4(d)(1). In addition § 255.4(d)(2) requires vendors to inform carriers, upon request, as to the procedures used.


254 14 C.F.R. § 255.9(a). The restrictions also do not apply towards carriers who refuse to enter into contracts that comply with the rule. Id.

255 Id. §§ 255.5, 255.6.

256 Id. § 255.5(a).

257 Id. § 255.5(b). See supra notes 44-47 and accompanying text for an explanation of net ticketing agreements.

258 Id. § 255.6(a).
the CRS-owning carrier’s ticket sales be made on its own system. In addition, agent contracts may not base fees on the identity of the carrier primarily sold by an agent.

Thus, an agent who books a large number of flights on a carrier that competes with a CRS vendor cannot be charged more.

Rather than end the CRS controversy, the CAB’s rules seemed to heighten the intensity of the conflict. CRS owners immediately developed procedures to circumvent the rule, the major technique being a biased second screen. Many carriers claimed that the original bias still existed. Perhaps because of this, a group of eleven smaller carriers brought a civil antitrust suit against American and United.

The continuing controversy led the Senate Subcommittee on Aviation to hold hearings on the subject to determine if further action should be taken or the rule merely amended.

Many of the carriers most heavily affected by CRS abuse were not satisfied with the CAB’s rule, either with the type of action taken or with specific sections of the rule. Republic Airlines and British Airways challenged the CAB’s rule in court.

Other carriers continued to complain to the Congress and the Department of Transportation...

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259 Id. § 255.6(b), (c).
260 Id. § 255.6(e).
261 Senate Hearings, supra note 113, at 75 (statement of Robert Crandall, President, American Airlines, Inc.). The biased second screen is an optional display, chosen by the agent, that is completely biased in favor of the CRS vendor. Id. at 7 (statement of Matthew Scocozza). The agent chooses a biased system because of incentives offered by the CRS vendors. Id. at 26. See supra notes 174-185 and accompanying text for a more complete discussion of the biased second screen.
262 Senate Hearings, supra note 113, at 29-73.
264 Senate Hearings, supra note 113, at 2.
265 United Airlines Inc. v. Dole, No. 84-1877 (7th Cir. filed Feb. 25, 1985). United’s position on the rule was opposite to Republic’s and British Airways, the latter two challenging on the basis of inefficiency. Senate Hearings, supra note 238, at 101-102.
about the effect of the rules. Some argued that bias on primary screens still existed. Others claimed that CRS vendors' new across-the-board fees were not justified by operating costs. Many of the complaints of the non-CRS carriers were the same as before the rule.

The major post-rule development is the non-CRS carriers' civil antitrust action in federal district court in California. At this early stage of the case, no new facts or findings have surfaced regarding CRS abuse. In fact one of the major problems of the case will be translation of raw economic data and corporate files into meaningful statistics which will accurately reflect the actions of CRS vendors. As with any complex civil antitrust case, discovery will be lengthy and tedious, and the final resolution may be years away.

Besides questions of compliance and adequacy, carriers complained of two new CRS abuses, high fees and biased second screens. One of the provisions of the CAB rule required that CRS vendors not discriminate among carriers as to fees. The CAB had declined to set fees, however, and this led to increased fees for all carriers. Some believe the higher, across-the-board fee has only increased CRS profits, bearing no relation to costs or the competitive rates of smaller CRS vendors. American and United vehemently disclaim increased profits and other carriers' cost figures.

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266 Senate Hearings, supra note 113, at 37-41.
267 Id. at 37.
269 49 Fed. Reg. at 11,650. Especially difficult to measure, though crucial to a plaintiff's case, are incremental revenues. Id.
271 Senate Hearings, supra note 113, at 38. (written statement of Lamar Muse, Chairman of the Board and CEO of Muse Air Corporation). Fees now range from $1.75 to $1.85 for all participating carriers, which is often a substantial increase, though in some instances it is a decrease. Id. Mr. Muse believes that "[a]ll the CAB rules did was to prohibit American and United from raping only a few small defenseless carriers as opposed to raping the entire industry." Id.
272 Id. at 36. Delta's Datas II systems charges a flat 75 cents per transaction. Id.
273 Id. at 75-76, 100-101. Mr. Crandall attributes Delta's lower fee to an increased use of incremental revenues. Id. at 78.
The most blatant new abuse is the use of a biased second screen. Both United and American offer a second screen option to their agents which allows the agent to switch to a completely biased display, biased wholly in favor of the CRS vendor. This new feature is designed to allow the travel agency to lock all of its terminals into the secondary screen with no ability for the individual agent to switch back. As with the primary bias discussed earlier, the biased second screen diverts bookings from participating carriers.

In response to the numerous and varied complaints and the seeming ineffectiveness of the CAB's rule, the Senate Subcommittee on Aviation felt the need to reexamine Congress' role in the regulation of the airline industry. The Subcommittee considered two different options, divestiture or amendment of the CAB's rule. The Senators noted, however, that the rule had only been in effect for four months. In general, the Subcommittee seemed reluctant to embrace any course of action at the time, especially divestiture. The testimony came from the Department of Transportation, non-CRS carriers, and CRS vendors.

The Department of Transportation mainly concluded that they had insufficient statistics from which to form an opinion. Though aware of the alleged problems, the Department's major concern seemed to be that wagons should not be fixed until broken. In their view, no evidence of inadequacies in the rule had surfaced. Having just received the CAB's authority, the Department of Transportation was naturally reluctant to immediately

\[\text{Id. at 7, 16.}\]
\[\text{Id. at 7. Though the addition of the switch and the decision to use it are up to the individual agencies, the CRS vendors have used various incentives to market its use. Id. at 30.}\]
\[\text{Id. at 1.}\]
\[\text{Id. at 1-2.}\]
\[\text{Id. at 9. (statement of Matthew Scocozza, Assistant Secretary, Office of the Assistant Secretary for Policy and International Affairs, Department of Transportation). "What I am saying today . . . is that we have no conclusions." Id.}\]
\[\text{Id. at 10.}\]
change the rule. The Department seemed even more reluctant to consider divestiture.\textsuperscript{280} On the whole, though committed to strict enforcement of the CRS rules,\textsuperscript{281} the Department of Transportation preferred to postpone any action until conclusive findings had been made as to the effectiveness of the rule.\textsuperscript{282} Secretary Dole, however, had procured an agreement with United and American to eliminate the use of the biased second screen.\textsuperscript{283}

The Department of Justice recognized the problems still plaguing the CRS industry as well as the new abuses. The new abuses had not caused the Department of Justice to change their decision against litigation.\textsuperscript{284} The Department of Justice's first recommendation was to revise or amend the rules to correct CRS abuse, while keeping open the options of antitrust litigation and divestiture.\textsuperscript{285} The Department argued against divestiture because of the loss of integrated efficiencies with no guarantee against preferential contracts between CRS's and their former owners.\textsuperscript{286} The Department further recommended against price regulation because of both "regulatory costs and inefficiencies."\textsuperscript{287}

Divestiture failed to receive a sizable number of supporters. CRS owners pointed to the problems of separating their in-house system from the main CRS and the availability of less drastic means.\textsuperscript{288} Some participating carriers felt that divestiture would not solve the problem

\begin{itemize}
\item\textsuperscript{280} Id. at 4-10.
\item\textsuperscript{281} Id. at 13.
\item\textsuperscript{282} Id. at 4. "The Department believes that it would be premature to undertake measures like the regulation of access fees or divestiture. The rules have only recently become effective and they should be given a chance to work. The magnitude and exact nature of any remaining problems with the rules are not fully clear, and it is even less clear that extreme solutions are necessary." Id.
\item\textsuperscript{283} Id. at 13. The agreement was signed voluntarily on March 26, 1985, and included Trans World Airlines. Id.
\item\textsuperscript{284} Id. at 17 (statement of Charles F. Rule, Deputy Assistant Attorney General, Antitrust Division, Department of Justice).
\item\textsuperscript{285} Id.
\item\textsuperscript{286} Id. at 25.
\item\textsuperscript{287} Id. at 16.
\item\textsuperscript{288} Id. at 84-85, 99, 141.
\end{itemize}
of monopoly price setting and would provide CRS vendors with "huge capital gains." Other carriers viewed the combination of loopholes in the rule and huge financial incentives for violating the rule as requiring divestiture. With lackluster support among those vested with the authority to force divestiture and those with the greatest to gain from divestiture, such action appears unlikely in the near future.

V. Conclusion

Probably the most astute observation regarding CRS abuse is that of the Department of Transportation, namely that the information is inconclusive. Depending on your perspective and definitions of terms, both the CRS vendors and the victim carriers could be correct. Nonetheless, some conclusions seem certain.

First, CRS’s are an essential and powerful element in the commercial airline industry. All major carriers depend in some measure on access to a CRS. CRS’s have an infinite potential for abuse and vendors have infinite incentives for abusing CRS’s. It is the extent to which these statements are correct that creates dissent.

A second conclusion that can be made is that CRS’s have been used to affect airline competition. United and American do not dispute this fact, though quantitatively they disagree with its significance. They respond that as they were the risk takers, they should receive the fruits of their success.

A third and crucial conclusion is that whatever free market argument favors the deregulation and protection of the CRS industry, CRS vendors did not develop their systems in the free market. From their inception, United, American, and TWA operated under governmental regu-

\footnotesize{289 Id. at 39.}

\footnotesize{290 Id. at 51 (statement of Phil Baker, President, Continental Airlines) "[T]he only certain solution is to simply prohibit the ownership of CRS systems by all air carriers. . . ." Id.}
CRS’s were born in an era of regulation. Smaller carriers did not fear the early development of CRS’s because they posed no real competitive threat. Routes, fares, and competition in the industry were relatively fixed. The number of offerings the public had to choose from was small. Thus, the present role CRS’s now fill did not exist prior to deregulation.

Deregulation made CRS’s the power they are. Only with deregulation did CRS’s develop into the crucial element in commercial aviation that they have become. The crux of the unfairness lies wholly in the switch from regulation. CRS vendors became entrenched during regulation; then they exploited their advantage afterwards. This chain of events is not an example of a "better mousetrap" and CRS regulation is justified on this basis alone. In addition, to the extent the present CRS regulation is ineffective, stricter rules are needed and justified. Free enterprise, in the form of fairer price competition, will flourish, rather than suffer, by governmental regulation of the CRS industry.

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291 Id.

292 Id. at 2. In an opening statement by Senator Hillings, the Senator states his view that "if someone builds a better mousetrap, let it be." Id. The Senator continues by saying that there may, however, be a legitimate role for government "intrusion." Id.