

YIELD MANAGEMENT AND THE AIRLINES INDUSTRY: A NEW STANDARD FOR PREDATORY BEHAVIOR

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EXECUTIVE SUMMARY

I. – Introduction: Deregulation process. Structural changes in the airlines market in light of deregulation. Other effects of deregulation in the airlines market. Introduction of hub-and-spoke system and yield management techniques. Preliminary comment about the dilemma of predatory behavior of major airlines.

II. – Yield management: Basics of yield management. Market characteristics and yield management. The use of yield management in the airlines industry. Overbooking. Discount Allocation. Traffic Management. Application of yield management in other industries.

III. – Predatory Pricing: Predatory pricing theory. Brooke Group case. Price below appropriate measure of cost. Recoupment. Skepticism about predatory pricing claims. Chilling effect over legitimate competition practices.

IV. – American Airlines case: General overview of the American Airlines case. Main arguments developed by the DOJ. Opportunity cost approach. Lack of business justification for American Airlines' practice.

V. – Conclusion: Airlines industry characteristics and predatory pricing claims. Difficulty to meet the standards set out in Brooke Group. Complex cost structures. Use of yield management as a predatory tool. New standard of predatory behavior for the airlines market. Predatory behavior mainly based on capacity.

I. - Introduction

Competition in the airlines market is perhaps one of the most controversial and present issues now under discussion in the American judicial courts. Besides, even the application of antitrust laws as well as the proper role of governmental intervention and, consequently, the extent of regulation, if at all, are still subject to endless debates involving the industry.

Before Congress passed the Airline Deregulation Act in 1978, airline management had very little incentive to search ways of maximizing

efficiency, not only because the government did not let airlines go bankrupt, but mostly because price and entry were heavily regulated.

Regulation was mainly based on the assumption that the airlines relevant market would be subject to “destructive low-price competition¹⁵⁰” without hefty governmental regulation. Besides, the government also sustained the theory that regulation would be necessary to make feasible an integrated system of air transportation. Nonetheless, regulation led to an airlines market greatly concentrated and known to charge very high prices, which were in fact the main reasons justifying the choice for a deregulation process.

After deregulation, however, some structural changes began to occur in the airlines market. Taking into consideration the high prices and the lack of entry regulation, a significant number of new airlines entered the market. Nonetheless, the lack of experience with this brand new competition environment, together with a major recession in the early 1980s, caused major set-backs in the industry. Several airlines did not survive this process¹⁵¹. And a following recession period in 1992 made the airlines market suffer another substantial loss of revenues.

After mergers and bankruptcies, nowadays to certain extent the market structure is fairly similar to the one before deregulation¹⁵². In other

¹⁵⁰ The regulatory structure for the airline industry was first devised by the Civil Aeronautics Act of 1938. Such provisions were basically kept unchanged by the later Federal Aviation Act of 1958. Back then, entry in the airlines market was initially conditioned to a certificate to be issued by the Civil Aeronautics Board - CAB, to be granted upon the finding by CAB of two requirements, namely: (i) that the applicant was fit, willing, and able to perform the transportation; and (ii) that the service was required by public convenience and necessity. Any mergers or transactions involving airlines were also subject to CAB’s approval. Likewise, CAB had jurisdiction to set rates, should it not agree with the tariffs filed the airlines for its review. Lastly, regulators were also in charge of assigning routes. See, e.g., Louis B. Schwartz et al., *Government Regulation – Free Enterprise and Economic Organization*, 28-29 (6th edition 1982).

¹⁵¹ Not only small airlines went out of business. Braniff Airlines, one the biggest carriers in the relevant market at the time, bankrupted after engaging in very aggressive methods in order to seek out new routes after the deregulation process. In short, the demand level simply did not justify the degree of expansion sought by Braniff. See, e.g., Raymond E. Neid. *Can the Aviation Industry Shield Itself from Business Cycles*. 13-SPG Air & Space Law. 3 Air and Space Lawyer Spring, 1999.

¹⁵² As a matter of fact, there are data indicating that the airlines industry is now more concentrated than it used to be during the regulation period. See, e.g., Russel A. Klingaman.

words, few companies in a concentrated market once again reflect the structure of the airlines industry. High levels of concentration and prices, as well as allegations of widespread use of anti-competitive practices, brought back the discussion about whether or not there should be regulation in the airlines industry. Or whether the level of deregulation applied is inadequate. None of these issues, however, will be addressed herein. The present paper will assume that the enforcement of antitrust laws is the best remedy.

Putting aside the question of the level of concentration in the market, other major changes derived from the deregulation process. These, conversely, remained in the airlines industry. Before deregulation, flights were usually point-to-point along east-west and north-south lines; a system widely used until 1980. The competition scenario made the airlines search for different options in order to increase revenues and traffic. Therefore, the solution found was the hub-and-spoke system, which allows the customer a greater choice of flights between two points at the expense of changing airplanes at an airline “hub”. Flights that used to serve only one market (point) now serve several.

But the greatest innovation brought after deregulation was the yield management system. First implemented by American Airlines, yield management effectively revolutionized the airlines industry and some other industries as well, by introducing modern concepts of maximization of profits. It enables large airline companies¹⁵³ to effectively compete with the lower fares offered by small carriers. In short, yield management allows larger carriers to allocate seats at low prices without losing the revenues of higher-pricing business travelers.

The reasons why the deregulation process did not work out as it should are rather blurry. At present, the main stream of cases filed against airlines is based on increasing predatory pricing allegations, as many small airlines have frequently been unable to keep themselves in the market. At the same time,

Predatory Pricing and other Exclusionary Conduct in the Airline Industry: Is Antitrust Law the Solution? 4 DePaul Bus. L.J. 281. p. 282. Spring-Summer 1992. (“In 1978 the top five carriers transported 69 percent of all passengers. In 1990, the top five carriers transported more than 73 percent of all passengers.”)

¹⁵³ The use of yield management techniques was particularly necessary because large carriers bear higher operation costs, which influence the fares practiced by them. In theory, this could put large carriers in disadvantage vis a vis the prices charged by smaller airlines.

however, it is widely known that predatory pricing cases seldom are successful.

These facts lead to several important questions. Are some particularities of the airlines industry to be taken into account in the assessment of predatory pricing violations? And if so, might yield management be deemed a powerful weapon in the hands of larger carriers, thus facilitating predatory behavior?

The present paper intends to briefly analyze these questions, by using the American Airlines case¹⁵⁴ as a paradigm. In order to proceed with the assessment of the questions posed herein, however, the theories of yield management and some peculiarities of the industry will be further detailed in order to provide the grounds for an analysis of the alleged predatory behavior exercised by American Airlines. Before that, however, this paper will describe the predatory pricing requirements under the case law in force so as to evaluate the feasibility of such a claim in the airlines scenario.

Therefore, the arguments extensively developed by the US Department of Justice in the American Airlines case will be paramount to the analysis proposed. The final question will then be faced. Should there ever be a different standard for assessing predatory behavior engaged by airlines?

II. – Yield Management

The main principle underlying yield management is actually quite simple. It relies on techniques that recognize the best way of optimizing profits generated by the sales of products or services, based on the forecasting¹⁵⁵ of demand behavior and effective market segmentation. This system employs discrimination of pricing systems into different kinds of customers in order to adapt supply to each price category.

Yield management helps companies to improve their competitive level, while keeping profitability¹⁵⁶. But yield management should not be

¹⁵⁴ United States v. AMR Corp., 140 F. Supp. 2d 1141 (D. Kan. 2001).

¹⁵⁵ Obviously the forecast of demand behavior subdivides itself in several aspects. In the airlines market, for instance, the forecast will take in to account various aspects, such as the time or purchase, trip's origin and destination, one way or round trip, individual or group, season, week day, among others. Besides, forecast will also analyze booking profiles and show up rates. See, e.g., Hossam Zaki. Forecasting for Airline Revenue Management. The Journal of Business Forecasting. Spring 2000.

¹⁵⁶ Usually yield management is defined as “the process of allocating the right type of

applied unless the market at issue presents several core peculiarities, such as: (i) demand segmentation into clearly defined parties; (ii) firms operating at relatively fixed capacity; (iii) perishable inventory; (iv) products sold in advance; (v) substantial demand fluctuation; and (vi) low marginal sales cost and high marginal production costs¹⁵⁷.

Accordingly, yield management's pricing discrimination entails the provision of different services or purchase characteristics at each price. Multiple prices must have a justification¹⁵⁸. What sorts of consumers would purchase the product or service, and the price they would value it, are some of the questions to be considered in order to make yield management decisions.

Yield management was born in the airlines industry. Even though it is clear that yield management can be an effective tool in several other markets¹⁵⁹, such as hotels¹⁶⁰, cruise lines, and car rental, the applications of this technique do have some particularities specifically tailored to the airlines market.

It should be pointed out, however, that the principal root concepts remain unchanged¹⁶¹. The strategy of selling the right seat to the right kind

capacity to the right kind of customer at the right price so as to maximize revenue or yield". See, e.g., Sheryl E. Kimes. *The Basics of Yield Management*. The Cornell H.R.A. Quarterly. November 1989. 15.

¹⁵⁷ Id.

¹⁵⁸ Airlines chose to differentiate the products they offer "on the basis of purchase and service restrictions, such as refundability, advance purchase requirements, and Saturday-night-stay requirements", among others. See Warren H. Lieberman. *Debunking the Myths of Yield Management*. The Cornell H.R.A. Quarterly. February 1993. p. 37.

¹⁵⁹ Examples of markets in which yield management techniques are not applied include, but are not limited to, movie theaters, performing-arts centers, stadium, and arenas, which usually charge fixed prices. See, e.g., Lawrence R. Weatherford et alia. *Forecasting for Hotel Revenue Management*. The Cornell H.R.A. Quarterly. August 2001. p. 53.

¹⁶⁰ Lately, the discussion about the application of yield management to the hotels industry has been one of the major topics in the management circles. Yield management applied to the hotels industry purports to maximize guest-room rates when demand exceeds supply, and to improve occupancy when supply exceeds demand. In the former case, this technique allows better profits even at the expense of average rate. See, e.g., Peter Jones and Donna Hamilton. *Yield Management: Putting People in the Big Picture*. The Cornell H.R.A. Quarterly. February 1992. p. 91.

¹⁶¹ Needless, to say, the airlines industry presents all the characteristics necessary for the application of yield management techniques. (i) relatively fixed capacity – airlines cannot add or remove seats or aircrafts at will (the scheduling of passenger in later flights is in

of purchaser at the right time and fare is basically the same as provided by the general theory of yield management. The way yield management¹⁶² was implemented in the airlines industry reflects the characteristics of the industry. Basically it purports the application of three basic strategies, namely, overbooking, discount allocation, and traffic management.

Overbooking is the practice of intentionally selling more reservations than the actual seats available on a flight. It actually reduces airlines losses due to passenger cancellations and no shows. However, overbooking definitely has its flip side. The long and repeated use of overbooking, without proper mitigation and/or compensatory measures, might lead to substantial reputation problems for an airline.

Roughly speaking, discount allocation is the method through which an airline determines the proper number of discount seats to be available. Here the idea is to stimulate price-sensitive demand in order to sell seats that would not otherwise be sold, while preserving the necessary space for time-sensitive business travelers so as to save the higher revenues arising from that specific kind of purchaser, who usually books only a few days before the trip¹⁶³.

fact the only flexibility available); (ii) market segmentation – the airlines industry features two well distinguished kinds of customers, the time-sensitive business traveler and the price-sensitive leisure traveler; (iii) perishable inventory – plane seats are referred to as inventory in the airlines industry (unsold seats of a plane which takes off are akin to perished inventory); (iv) products sold in advance – early reservation is a usual practice in the airlines industry; (v) fluctuating demand – demand oscillates seasonally; (vi) low marginal sales costs and high marginal production costs – while the price for an additional passenger for a sold flight is low, the costs for the “production” of another flight are high. See, e.g., Frederic Voneche. Yield Management in the Airline Industry, available at www.luc.edu/faculty/eventa/archive/su483we/yield.htm.

¹⁶² Yield management, however, is not the only fare strategy practiced in the airlines market. As a matter of fact, the airlines industry features several different price strategies, such as single pricing, multiple pricing; leg-based pricing (LaGrange method), full-origin-destination (linear programming technique), and virtual nesting approach (expected marginal seat revenue – EMSR). This paper, however, will only explain yield management strategies, thus not addressing these other price techniques. For a better understanding of other air fare methods available in the airlines market, see Reza G. Hamzaee and Bijan Vasigh. An Applied Model of Airline Revenue Management. *Journal of Travel Research*. V. 35. p. 64-8. Spring 1997.

¹⁶³ Likewise, the hotels industry also faces a segmentation between business and leisure travelers, each one with different price and time elasticities. See, e.g., Walter J. Relihan.

In short, discount allocation aims at finding the optimal mixture of passengers traveling on lower-fare discounted fares and passengers paying full fares. The airlines industry has had a particular concern with discount allocation, especially after the demise of several carriers due to prior inability to control the proper availability of discount seats.

Lastly, traffic management is a process that airline companies use in order to control passengers by passenger origin and destination. Traffic management entails the choice between the markets available that will best maximize revenues. In light of the hub-and-spoke system, airlines will have to analyze whether to use multiple flight connection over single point-to-point flights, offering prices accordingly¹⁶⁴. Therefore, passenger demands and reservation inventory control are indispensable elements to be taken into account in the administration of such a process.

In order to cope with all these complicated strategies, airlines have devised highly sophisticated computer reservation systems. For instance, American Airlines has SABRE (Semi Automated Business Research Environment), a software which controls in a centralized fashion all reservation activities of the company.

These computer systems, especially SABRE, quickly adapt to any change in the industry in order to be able to consider the best decisions in accord with the yield management strategy. SABRE is able to effectively divide all yield management concerns into the three basic tools already described, namely, overbooking, discount allocation, and traffic management¹⁶⁵.

The Yield Management Approach to Hotel-Room Pricing. The Cornell H.R.A. Quarterly. May 1989.

¹⁶⁴As mentioned, the hub-and-spoke system effectively changed the options offered by the airlines market. See Barry C. Smith et alia. Yield Management at American Airlines. Interfaces 22:1. January-February 1992. (“In 1980, approximately 10 percent of American’s traffic consisted of connecting passengers. By the mid 1980s, about 66 percent on a typical flight going to a hub airport were connecting to another flight to get their destinations”)

¹⁶⁵ American Airlines uses a module aggregating all these three issues involving yield management decisions. The module is called DINAMO (Dynamic Inventory And Maintenance Optimizer). With the implementation of said module, American Airlines reduced the spoilage level to only three percent, meaning that only three percent of the seats were empty on sold-out flights.

Competition, however, changes the way yield management decisions are made. Price dispersion usually increases in more competitive routes or in routes featuring lower flight density, “consistent with discrimination based on customers’ willingness to switch to alternative airlines or flights¹⁶⁶”. Besides, airlines that operate computer reservation systems apparently present a higher degree of price dispersion than airlines without access to such systems¹⁶⁷.

What happens then if an airline decides to make use of these highly sophisticated systems to engage in predatory behavior? Could yield management in any way help an airline to illegally monopolize a given route? If so, should this be under a predatory pricing scheme? Before addressing these issues, however, this paper will dedicate the next topic to an assessment of the current requirements for a predatory pricing case.

III. – Predatory Pricing

A predatory pricing scheme entails intentional sacrifice of present revenues in order to drive out competitors of a given market, so as to permit recoupment through the charging of monopoly prices in a posterior moment. The controlling Supreme Court case for predatory pricing theory is *Brooke Group, Ltd. v. Brown & Williamson Tobacco Corp*¹⁶⁸. In a nutshell, the Court in *Brooke Group* established two basic requirements without which a predatory pricing claim is bound to be doomed, namely, price below some measure of cost¹⁶⁹, and possibility of recoupment.

¹⁶⁶ Price dispersion may arise from either different costs of serving different passengers or from price discrimination.

¹⁶⁷ According to empirical studies executed by Severin Borenstein and Nancy L. Rose. *Competition and Price Dispersion in the U.S. Airline System*. *The Journal of Political Economy*. Volume 102. Issue 4. August 1994. p. 653-683. The authors basically propose a model under which price dispersion should decrease with concentration if heterogeneity in cross-elasticity are the more common source of discrimination (competitive type discrimination), and increase should the industry elasticities be the more prevalent basis for segmentation (monopoly type discrimination).

¹⁶⁸ 509 U.S. 209, 222 (1993).

¹⁶⁹ In *Brooke Group*, the Supreme Court did not address the question of what should be the appropriate measure of cost, because both parties agreed on average variable cost for such an assessment.

These requirements deserve some thought. The appropriate measure of cost has been much debated in the lower courts. However, case law has settled for the average variable cost (AVC) measure¹⁷⁰ proposed by the renowned article written by Areeda & Turner¹⁷¹. It is important to note at this point that courts have repeatedly rejected the consideration of opportunity costs in the assessment of predatory cases, for it would “impermissibly restrict the decision-making power of businesses¹⁷²”.

On the other hand, the notion of recoupment in a predatory pricing scheme has been more clearly detailed in the Brooke Group case. According to that Supreme Court’s decision, recoupment would only be feasible whenever the intended effects on rivals are verified, and there is likelihood of injury to competition¹⁷³.

Accordingly, as threshold matters, a Plaintiff has to demonstrate that the below-cost predatory pricing strategy is able to either drive competitors out of the market or make them charge supracompetitive prices following the pattern set by the monopolist (discipline theory). In addition to that, a Plaintiff must also demonstrate that the predatory scheme will result in monopoly prices. Thus, the structure of the market is of paramount importance for the analysis of a predatory pricing charge¹⁷⁴, since injury to competition is unlikely to occur in a market with no relevant entry barriers.

¹⁷⁰ There is, however, some variation among the circuits in the interpretation of the right measure of cost. For predatory pricing purposes For an overview of the measures applied by each of the federal circuits, see Penelope A. Prevolos. *Unfair Practices and Predatory Pricing*. 1290 PLI/Corp 227. January-February 2002.

¹⁷¹ Phillip Areeda & Donald F. Turner. *Predatory Pricing and Related Practices Under Section 2 of the Sherman Act (1975)*. Areeda & Turner basically argue that if a company charges prices above average variable cost, there is a presumption of non predatory behavior. If the price is below average marginal cost, however, a deeper look might be necessary.

¹⁷² *Rebel Oil Co. v. Atlantic Richfield Co.*, 957 F. Supp. 1184, 1202 (D. Nev. 1997)

¹⁷³ The issue of recoupment is paramount to the result of a predatory pricing claim. The Supreme Court granted summary judgment in *Brooke Group* because it found that *Brown & Williamson* had no likely possibility of recoupment.

¹⁷⁴ As recognized by strategic theory, which requires several aspects in order to make a finding for predatory pricing feasible, such as a facilitating market structure, a scheme of predation and supporting evidence, probable recoupment, price below cost, and absence of a business justification or efficiencies defense. See, e.g., Kenneth G. Elzinga and David E. Mills. *Predatory Pricing and Strategic Theory*. 89 *Geo. L.J.* 2475.2001.

As a final note, it is worth mentioning that the recoupment requirement is particularly important since prices below marginal average cost may have a legitimate business justification. In some markets this notion is implied. Perishable food and fashion industries sometimes have to sell products for prices below cost in order to avoid major losses. Marketing promotional practices, such as free sampling, are equally lawful as they result from reasonable business decisions, thus not raising predatory pricing concerns.

Courts have been very skeptical about predatory pricing claims. And the reason for that relates to the fact that predatory pricing mechanisms are similar to vigorously-competitive price strategies widely seen in stiff competition environments, which are in fact the ultimate goal of antitrust laws. They both rely on the lowering of prices. Therefore, mistaken inferences in predatory pricing cases are very costly, for they might have a chilling effect upon legitimate price competition¹⁷⁵.

IV. – American Airlines case

After this brief and general presentation of predatory pricing, it is time now to turn to the American Airlines case. On May 13, 1999, The US Department of Justice (DOJ) brought antitrust suit against AMR Corporation and its two airline subsidiaries, American Airlines, Inc. and AMR Eagle Holding Corporation (together American Airlines) seeking to enjoin them from monopolizing and/or attempting to monopolize the airline passenger service to and from the Dallas Fort Worth International Airport (DFW), in violation of Section 2 of the Sherman Act.

¹⁷⁵ The fear of the “chilling competition effect” has been emphasized in all three major predatory pricing cases that reached the Supreme Court, namely, *Cargill, Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104 (1986), *Matsushita Electric Industrial Co. Ltd. V. Zenith Radio Corp.*, 475 U.S. 574 (1986), and *Brooke Group*. The Supreme Court actually emphasized its skepticism in *Matsushita*, by stating that “predatory pricing schemes are rarely tried and are even more rarely successful”. The fear of chilling competitive behavior might be one of the reasons why the Court has rejected to give much weight to an subjective approach to predatory pricing claims (the question of predatory intent), rather applying objective standards based on price and recoupment. See, e.g., Michael L. Denger and D. Jarret Arp. *Predatory Pricing and Practices*. PLI Order No. B0-01C7, 187-193. January-February 2002.

The case built by the DOJ was based on few, but very important, facts. Due to lack of competition, American Airlines was apparently charging fares higher in the DFW market than in other (more competitive) routes. This drew the entry of low-cost airlines in that market. Actually, according to the findings made by the DOJ, low-cost carriers (LCCs) were the only ones in a position to undercut to a certain extent American Airlines monopoly in the DFW market, since they have much lower operating costs than major hub carriers, and, therefore, were offering lower fares.

American Airlines felt the presence of the LCCs and decided to strike back. It responded the LCCs' entry by increasing capacity and reducing fares. The DOJ reached the conclusion that such a strategy would not make sense, except as a means of driving out the LCCs from the DFW market. The predatory intent of such practice was demonstrated, as American Airlines reduced the number of flights serving that specific route and increased prices to the prior levels once the LCCs went out of business.

The District Court for the District of Kansas, however, did not agree with the DOJ's legal and factual findings in the case. Judge J. Thomas Marten granted summary judgment for American Airlines. The decision basically deemed lawful American Airlines' practices, arguing that it did not price below an appropriate measure of costs and that recoupment was unlikely. This decision was appealed to the US. Court of Appeals for the 10th Circuit, and awaits judgment.

There is no way to anticipate the appellate court's view on the matter. However, it is worth pointing out some key issues in the case. It is true that the government came up with unusual measures of asserting American Airlines' costs. The DOJ considered as variable some costs that would normally be fixed, such as the operating and ownership cost of the extra aircraft, fuel, among others, which American Airlines had to allocate to the DFW route in order to add capacity in that market. Based on this assumption, the DOJ reinforced its argument by stating that American Airlines actually lost money with the decision to invest in additional resources in the DFW market. These allegations built the case for a predatory behavior claim.

The District Court, however, rejected this "opportunity cost" approach¹⁷⁶. And it also asserted that American Airlines was only matching

¹⁷⁶ The District Court actually considered the DOJ's theories similar to profit-maximization approaches.

the fares charged by LCCs, never undercutting them, thus applying the “meeting competition” defense. The District Court also considered that there were no relevant entry barriers in the DFW market, and, therefore, recoupment was not likely to happen, as already mentioned.

By doing so, however, the District Court disregarded the key issue raised by the DOJ. The case actually involved a capacity predatory behavior, rather than a mere predatory pricing scheme. Judge Marten avoided facing the core of such a claim, by assuming that every predatory pricing strategy is consequently followed by an increase in the capacity, therefore applying the regular requirements set out in *Brooke Group*.

While there is some truth to that statement, the application of the yield management techniques to the airlines industry gives weight to the DOJ’s conclusions in the case under discussion. The District Court in the *American Airlines* case followed the trend towards skepticism in predatory pricing cases. Without a doubt such skepticism is fairly justified, for the reasons stated above. However, there are situations in which some alternative standards may be required in order to enforce the main goals purported by antitrust laws.

In the case at hand, the District Court Judge merely compared routes, frequency of flights, prices, and costs in the DFW market, thereafter applying the standards set out in *Brooke Group* in order to ultimately conclude that there were no grounds for a predatory pricing case. The District Court’s opinion, therefore, represents a very narrow view of *American Airlines’* behavior. There are enough arguments to sustain that the application of case law’s general predatory pricing theory was inappropriate in light of the peculiarities of the airlines industry. These peculiarities will be briefly broken down as follows.

First of all, the decision completely ignored the fact that, after the introduction of the hub-spoke system, airlines work within a network system consisting of several connecting flights. Airlines fares are the reflection of thousands of combinations. Thus, the cost analysis can never be as simple as put by the District Judge¹⁷⁷. The structure of prices became far too complicated to permit the type of assessment used in the opinion.

¹⁷⁷ According to Robert M. Rowen. 13-WTR Air & Space Law. 1999. p. 14. “just as it is wrong to define incremental cost as the cost of adding a passenger on a less than full flight, it is wrong to consider system revenue contribution from a connecting passenger without considering the cost of operating the connecting system.”

The role of yield management techniques in the predatory behavior at issue was blatantly neglected by the District Court. American Airlines made use of discount allocation and traffic management to devise a strategy of complex multi-layered fares which allowed it to match the LCCs' prices. The additional capacity was mainly destined to price-sensitive customers, who are usually targeted by LCCs.

As already seen, major airlines have computer reservation systems that forecast demand behavior and offer market solutions. In theory, American Airlines had in fact all the tools necessary to anticipate the price-sensitive demand, thus increasing supply with the specific purpose of driving the LCCs out of the DFW market. Therefore, it is feasible to sustain that American Airlines could have saturated the market with the additional capacity.

Besides, there would be no need for American Airlines to charge fares below LCCs' prices. Major incumbent airlines have several advantages over new-entrant carriers. Not only do they have better reputations as a general assumption, but they also have stronger relations with travel agencies, not to mention frequent flyer programs¹⁷⁸. Besides, charging fares below LCCs' prices would not allow American Airlines to make use of the "meeting competition" defense, which was accepted by the District Judge.

Furthermore, there is no legitimate business justification for American Airlines' practices in the DFW market. The decision to add capacity in the DFW route has not been verified in other markets. The DOJ has particularly identified that American Airlines did not engage in similar behavior in markets in which it competes with Southwest Airlines, which is a large low-cost carrier. The DOJ then contended that American Airlines probably recognizes that Southwest has enough power to bear the harms of a predatory

¹⁷⁸ See, e.g., Russel A. Klingaman. *Predatory Pricing and other Exclusionary Conduct in the Airline Industry: Is Antitrust Law the Solution?* 4 DePaul Bus. L.J. 281. p. 306. Spring-Summer 1992. ("Not only does the role of information impose a cost on new entrants, but incumbents use informational advantages to limit losses generated by low-cost entry. Through the use of complex multi-layered fare structures and computer-operated capacity controls, an incumbent predator can match or beat the new entrant's lowest fare. However, that new low fare offered by the incumbent will be restricted to only leisure-oriented, price-sensitive travelers. Meanwhile, the incumbent's reputation, combined with travel agent and frequent flyer loyalties generated through commissions and free tickets, will allow the incumbent to maintain high yields on a significant portion of seats in contested routes. This is referred to as yield management").

attack and survive, which was not the case of the small new-entry LCCs of the DFW route¹⁷⁹.

V. - Conclusion

It will be in fact very hard to build a case based on predatory pricing schemes involving the airlines industry. The costs are very difficult to compute. But more importantly, the yield management system may render traditional predatory pricing standards inapplicable¹⁸⁰. This is why a standard based on capacity might be a better antitrust solution for cases involving airlines. It definitely meets the goal of deterrence of predatory behavior purported by the Sherman Act, while not subjecting the unlawfulness of such practice to the requirements set out in Brooke Group.

Brooke Group could never control a predatory case such as American Airlines'. Brooke Group dealt with the cigarettes industry, which is not particularly affected by increase of capacity. Aircraft can be easily removed to a different route. The outstanding ability of the airlines industry to relocate additional capacity makes the new capacity standard more appropriate.

Without the proper application of antitrust laws, major airlines are able to send a message to all potential entrants. They can effectively establish the reputation of an incumbent that will react whenever low-cost carriers decide to enter the DFW routes. But this had also a spill-over effect, as LCCs will also be deterred from entering in other markets in which major airlines have monopoly power. Besides, this anti-competitive routine will render business financiers suspicious to invest in small new-carriers.

¹⁷⁹ Are consumers better off? The District Judge thought so. But the market prices went back to what they were before the entry of the LCCs. However, there is no evidence that the fares charged by American Airlines prior to the LCCs' entry were competitive at all. Not only did American Airlines have monopoly power on the DFW market, but also statistical data informed that prices were actually higher than the ones practiced in more competitive routes, according to the findings made by the DOJ.

¹⁸⁰See Robert M. Rowen. Decision Opens Season on Predatory Activity. 16-FALL Air & Space Law. 7-9. 2001. ("The court refused to apply a reasonable cost-revenue analysis. I have previously discussed the problem of applying traditional cost and revenue analyses in the airline industry, concluding that, under some applications of the traditional tests, a hub airline could literally give away seats on a flight to force a competitor out. If such an extreme form of conduct passes the cost test, the test has little validity").

The predatory-reputation barrier to entry, however disregarded by the lower court, is very significant. A new standard of predatory behavior mainly based on capacity, with ancillary pricing effects, is therefore mandatory¹⁸¹. It might have the effect of restoring competition in routes which are now monopolized. And above all, it might give consumers the benefit of long-standing lower-price options by reducing artificial entry barriers, thus neutralizing deterrence-investment strategies.

¹⁸¹ The proposal of harsher measures should perhaps be considered. Divestiture by major incumbent carriers of their computer reservation systems is one of the options to lower the entry barriers of the airlines market.

