case three
The US Airline Industry in 2004

Teaching Note

Synopsis

In spring 2004, the US airline industry showed little sign of emerging from the crisis that had gripped it since September 2001. The aftermath of the September 11 terrorist attack was sharply lower demand for air travel resulting in a massive overhang of excess capacity. Despite aggressive cost cutting, costs were up for most airlines (especially fuel and insurance costs). Amidst the general gloom of early 2004, the case asks: What are the airline industry's prospects of earning reasonable profits in the future?

As the case makes clear, the recent woes of the industry are only an exacerbation of the long-term problems that the industry was facing. The industry's profit performance since deregulation in the early 1980s has been abysmal – in many years the industry as a whole has made a loss, while among the larger airlines, only Southwest has earned a return on its capital in excess of its cost of capital.

To provide a basis for understanding the factors that drive competition and profitability in the industry, the case outlines the two major periods of the industry's post-Second World War history: the period of regulation up until 1978, and the period of deregulation since then. Once the regulation of fares and entry was abandoned, the case shows how the fundamental economics of the industry transformed competitive behavior. New entry, excess capacity, high exit barriers, limited opportunities for product differentiation, and high fixed costs combined to encourage aggressive price competition.

The case also shows how the strategies of the airlines attempted to moderate ruinous price competition. Mergers, frequent flier programs, building dominant positions at

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particular hubs, and using predatory pricing to threaten low-cost entrants were all means by which the major airlines attempted to tame competition.

Looking ahead, the case asks whether vigorous competition and low profitability are an inevitable result of the nature of airline economics, or whether the evolving structure of the industry and the strategies of the airlines offer the prospect of a return to financial health for the industry.

TEACHING OBJECTIVES

I wrote this case to allow students to gain experience in applying the basic tools of industry analysis to a familiar and easy-to-analyze sector. I have long used *Crown Cork and Seal* as my favored case in industry analysis, but decided that it was time to update to something more contemporary.

The airline industry is highly suitable for analyzing the relationship between industry structure, competition, and profitability for several reasons:

- The industry is a disaster in terms of its financial performance. This immediately raises some interesting questions: is this because the airlines are badly managed (Southwest, after all, earns quite respectable profits), or is it the fault of bad industry economics?
- The industry offers a relatively simple application of the Porter Five-Forces analysis.
- It is possible to look at how changes in industry structure over time have impacted industry profitability.
- There is clear evidence of how the industry players have adjusted their strategies in order to influence competitive behavior in the industry.

POSITION IN THE COURSE

This case is an introductory case suitable for that part of the course outlining the basics of industry and competitive analysis.

ASSIGNMENT QUESTIONS

1. Assess the financial performance of the US airline industry during the past 20 years.
2. To what extent can the industry's low profitability be attributed to the structure of the industry? Which of Porter's Five Forces has had the biggest impact in depressing industry profitability?
3. In what ways, and with what success, have the airlines' strategies attempted to counteract competitive forces depressing profitability in the industry?
4. What is the outlook for industry profitability during the remainder of the decade?

READING

R. M. Grant, *Contemporary Strategy Analysis* (5th edn), Blackwell Publishing, 2005, chapter 3.

CASE DISCUSSION AND ANALYSIS

I have taken two approaches to teaching this case:

1. An historical approach where I follow the history of the industry since the days of regulation and ask students about the key structural features of the industry at each stage of the industry's development and their implications for competition and profitability. Such discussions follow the following pattern:
   - Regulation. What were the main features of the industry's regulatory structure during 1945–78? What were the main dimensions of industry structure and competition that were subject to regulation? What were the implications for competitive behavior in the industry?
   - Deregulation. What were the consequences of deregulation for industry structure and competitive behavior? Were the economists who supported deregulation right about the "contestable" nature of the industry? Is this an industry where entry and exit are easy?
   - Following deregulation, why did the industry display such dismal financial performance, with profitability generally low and bankruptcies frequent?
   - How did the airlines respond to the difficult competitive conditions in the industry? Were their strategies successful in changing industry structure and competitive behavior to weaken price competition and improve margins?
   - What structural changes in the industry can be anticipated over the next 5 years and what will be the implications of these for the overall profitability of the US airline industry?
2. An emphasis on industry profitability following deregulation and an inquiry into the characteristics of industry structure that have produced this poor profitability.

My preference is for the latter approach, which I typically find is more direct and more tightly focused around the key analytic framework. Hence, I will expand on this approach.

Industry Performance

In the decades since deregulation industry profitability has been low or negative (though nothing so bad as the first few years of the new century). Table 3.2 shows the industry's return on investment during the 1980s averaged 6.8%, and during the 1990s it was 5.1%. In 2000–2 it was –6.4%. How bad is this? I ask students for an appropriate benchmark – possibilities are the average for all industries (e.g., average ROI for the S&P 500) or the industry cost of capital. We have no data on cost of capital for the airline industry, but it's worth while to ask students for a rough-and-ready estimate. Thus, during the 2000s:

Risk free rate (return on 30yr. T-bond): approx. 6%

Market equity risk premium: approx. 5%

Airline industry beta: probably >1 (say, 1.2)

This implies an equity cost of capital of 12%

Cost of debt: 6%, plus risk premium of 3%, less 40% tax rate = 5.4%

Assume 2:1 debt/equity ratio: WACC = 7.6%

Clearly, the industry is earning negative economic profits, a fact that is supported by the frequency of bankruptcies in the sector. It is also noteworthy that industry performance is cyclical: the industry was modestly profitable during 1995–9 with an average ROI of 12.2%. Let's come back later to the changes in profitability over time.

Why Has Industry Performance Been So Poor?

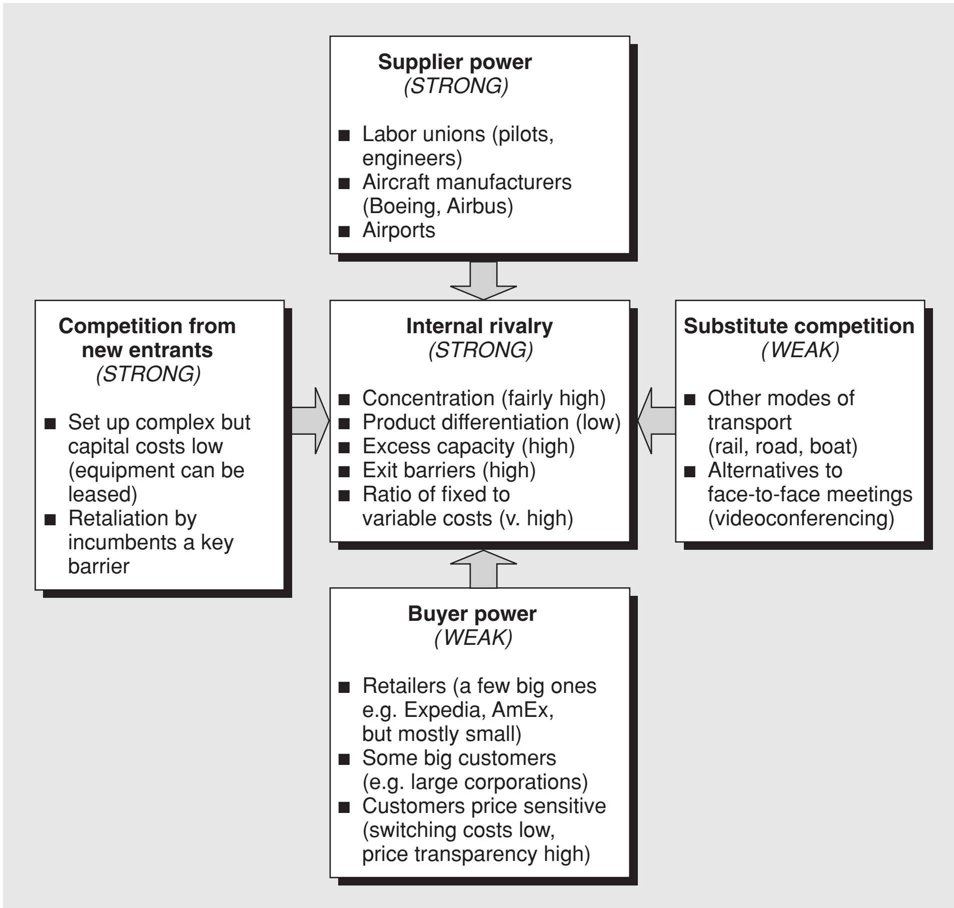
Despite assigning readings on the analysis of industry structure and competition, this question typically elicits a variety of responses. I try to move quickly away from notions that poor industry profitability has been decreed by God or is the fault of management (though I do like to return later to the role of management in perpetuating the conditions of intense competition).

One argument that tends to arise (and can prove troublesome) is that profits are low because costs are high. Eliciting further information about these costs tends to identify items such as wages, fuel, and aircraft. On the issue of "costs being high," I ask the students what this means and whether costs are higher in the airline business than in other sectors (semiconductors, pharmaceuticals, movie production). On the issue of "costs increasing," I address, first, the empirical issue and note that during the mid-1980s and mid-1990s crude oil prices were at all-time lows in real terms and, second, ask whether industries where costs are rising (personal services, healthcare, management consulting) have lower profitability than industries where costs are falling (telecommunication services, food production, personal computers).

Reverting to a structural analysis of competition, I adopt one of two approaches:

1. Present the Five-Forces framework then get the students to fill in the boxes, or
2. Create a list of points on the board and then organize these under the headings of the Five Forces.

Either way, we emerge with something like the figure shown below.



Among the key points that I bring out in this analysis are:

1. *Supplier power*. There is a lot of monopoly and duopoly power upstream. The unions and the airports are effectively monopolists – the unions (especially the pilots) have used this power to keep wages and benefits high and impose restrictive working practices that keep productivity low. The plane manufacturers are duopolists – how much supplier power they possess depends critically upon the balance of supply and demand. When the plane manufacturers are suffering from excess capacity, bargaining power is with the airlines – they can easily delay buying and extend the lives of their planes.

2. *Industry rivalry*. The main competitive force in this industry is rivalry between the airlines. We know this is very strong – look at the frequent price wars that break out. The key to understanding this intense rivalry is the *combined* effect of the different structural factors. The prime driver is excess capacity – the airlines are always willing to compete on price in order to fill

empty seats. How low can prices fall below average cost? Very low. Because of the preponderance of fixed costs, airlines will, in principle, be prepared to sell seats at any price that covers average variable cost and makes a contribution to overhead. (I like to ask the class what percentage of total costs is fixed for the major airlines – it must be in excess of 95%. Once the schedule has been set then most labor costs, fuel costs, and capital costs are fixed.) This excess capacity problem is perpetuated by the long-lived assets (especially aircraft) and failure of bankrupt airlines to exit the industry due to the protection offered by Chapter 11. (Indeed, relieved of debt payments and other contractual obligations and hungry for cash flow, the bankrupt airlines tend to be leaders in fare cutting.)

3. *Entry*. Much of the case over deregulation was based upon arguments for "contestability" – if airlines could enter and exit individual routes and regional/local markets easily, then the industry would establish levels of prices and profits that would approximate to those in perfect competition. Were the proponents of contestability correct? Barriers to entry are not especially high – most capital equipment can be leased, and so can pilots and crews. However, while the capital costs of entry may be low, putting together the whole range of resources and capabilities needed to operate an airline (including gates, landing slots, and regulatory approvals) tends to be difficult. Also, aggressive competition from established airlines increases the costs and difficulties of entry. Whatever the *ex ante* arguments, the fact is that new entry has been a continuing feature of the industry's evolution since deregulation, with a number of new start-up airlines entering during 2000–4.

4. *The combined impact of the different competitive forces.* Although rivalry between the airlines has been the major competitive force depressing prices and profits, it is important to note that within the Five-Forces framework, the competitive forces interact with one another in a complementary way. Thus, while industry rivalry provides the primary mechanism for competition, it is the ability of new entrants to come into the industry (bringing with them additional new capacity) that can trigger destructive price competition, while the pressure from price-sensitive buyers can exploit to the maximum the willingness of the airlines to offer special deals to fill empty seats.

5. *The relevant industry/market.* As with all industry analysis, a critical issue concerns the relevant boundaries of the industry. The US market for passenger air transport comprises a number of distinct markets: every city pair is a separate market in terms of demand-side substitutability. Competitive conditions differ hugely between them – some are monopolies (Washington National to White Plains, NY); others are intensely competitive (LA–San Francisco). Thus, in analyzing competition within the US airline industry we are in effect generalizing and averaging across many separate markets. It could also be argued that, from a broader perspective, the US airline industry is too small a unit of analysis – US airlines also compete in international air transport and there are linkages between domestic and international routes. Both these points have

validity. I stress that the appropriate boundaries for an industry are a matter of judgment (and convenience). In the case of the US airline industry, it is useful to consider the domestic market as separate from the international market (the companies competing are different), but it is often useful to take a more disaggregated analysis and consider competitive conditions in specific regional and local market segments.

Impact of the Airlines' Strategies on Competitive Conditions

Over time, we observe changes in the operating margins earned in the industry according to changes in the industry conditions. In particular, fluctuations in the level of excess capacity can have a major impact on price competition and profitability. Thus during periods of weak demand (e.g., 1990–2), the industry is awash in excess capacity and price competition depresses (or eliminates) margins.

Throughout the period of deregulation we observe attempts by the airlines to influence competitive conditions to moderate the intensity of price competition in the industry. Among the strategies deployed by the companies are:

- Predatory price competition: aggressive competition aimed at budget airlines and new entrants. Result: (a) forcing exit of small airlines with limited financial resources; (b) deterring entry by others.
- Mergers and alliances: acquisitions and alliances (e.g., code-sharing agreements) have had the effect of increasing concentration in the industry and replacing competition by cooperation.
- Attempts at product differentiation: tangible product differentiation low and difficult to implement (without substantially increasing costs). Most successful measure: frequent flier schemes.
- Hub-and-spoke systems: though ostensibly for the purposes of operational efficiency, such systems have the effect of consolidating capacity and routes at a few airports. This creates near-monopolization of gates and slots at some airports.
- Forward integration to resist buyer power. The airlines have increasingly taken power from retailers (especially travel agents) by expanding their own direct sales and reservation services (both telephone and Internet based) and creating specialized online ticket agencies (e.g., Orbitz was set up to compete with Travelocity and Expedia).

How effective have these measures been? Given the overall lousy profitability of the industry over the past two decades, the answer is "not very." However, it is notable that during the latter half of the 1990s, profitability in the industry was rising. This suggests that up until the 2000–3 economic downturn and the post-9/11 terrorist problems, the changes occurring in the industry were helping to moderate competition and restore margins.

Future Prospects

What is the outlook for competition and profitability over the next 5 years? As of spring 2004, the immediate outlook remains worrying. All the airlines have suffered significant drop in passenger demand; at the same time fuel prices are at record highs, insurance costs have risen astronomically, and most of the major airlines have made limited progress in cutting labor costs.

The key question is what structural changes will occur over the medium term and how these will affect competition. The critical variable is demand. If the US economic recovery remains weak and terrorist threats continue, then the prospects for any significant revival in the airline industry's fortunes look remote. We know from past experience how excess capacity creates the conditions for price wars and losses.

An interesting issue is whether the extent of the current crisis is likely to result in major changes in industry structure that might transform the competitive dynamics of the industry. Several of the major airlines – UAL and US Airways in particular – remain mired in financial difficulty. If one or both of these airlines was to go from Chapter 11 into liquidation, the result could be a major consolidation of the industry.

However, the prospects of any reduction in the number of airlines competing are offset by the prospects for continuing entry into the US airline industry. In addition to the future new low-cost airlines is the possibility that overseas carriers might be permitted to compete on US domestic routes.

What about the benefits of continued cost-cutting by the major airlines? Whether the airlines reduce costs by pruning overheads and running costs (e.g. American) or setting up low-cost subsidiaries (United), it seems likely that the result will be mainly to reduce the competitive advantage of the budget airlines (Southwest, JetBlue, etc.) rather than to increase industry-wide profits.

Take-Aways from the Case

1. To understand why the levels of competition and profitability in an industry are what they are, analyzing industry structure does work! In particular, the Porter Five-Forces model provides a systematic and useful framework for analyzing the impact of industry structure on competition and profitability.

2. The Porter Five-Forces model is not just useful in explaining the past and the present; its real value to managers is:
   - *Predicting the intensity of competition and levels of profitability in the future*. If we can predict the changes in industry structure that are likely, then we can evaluate whether these changes will tend to increase or reduce the intensity of competition in the industry.
   - *Suggesting strategies that can moderate the forces of competition in order to increase overall industry attractiveness.* Over the past two decades, the airlines' competitive strategies have sought to raise entry barriers, increase product differentiation, and increase seller concentration in local/regional markets. To what extent might mergers, capacity reduction, and attempts

to weaken the power of the unions be successful in improving the balance of competitive forces?

3. The Porter Five-Forces analysis (like most other strategy frameworks) is not an algorithm that provides clear and precise answers. The Five-Forces framework is a means of organizing our analysis of the many factors influencing competition and profitability in an industry. It helps us to identify the key structural factors that drive competition and predicts whether each of these factors will tend to increase or reduce the intensity of competition. However, these different factors interact with one another and it is difficult to predict the overall impact on competition and the competition of multiple factors acting together. Thus where some factors (e.g., mergers) are tending to moderate competition while others (e.g., increased excess capacity) are tending to increase competition, predicting the overall impact on profitability is difficult. The answer is to gain insight and understanding through continued experience in applying the Five Forces to the analysis of industries.