

Table 3.4 The US passenger airline companies in 2003

Major airlines	Alaska, America West, American, Continental, Delta, Northwest, Southwest, United, US Airways
National airlines	Air Tran, Air Wisconsin, Aloha, Atlantic Southeast, Comair, Continental Express, Continental Micronesia, Executive, Frontier, Hawaiian, Horizon Air, JetBlue, Mesaba, Midway, Midway Express, Ryan Int'l, Skywest, Spirit Air, Sun Country, Trans States, US Airways Shuttle
Regional airlines	Air Midwest, Allegiant, Ata, Atlantic Coast, Casino Express, Chautauqua, Chicago Express, Colgan, Corporate, Falcon, Air Freedom, Florida West, Gulfstream, North American, Pan American, Pinnacle, PSA, Skyway, Sun Pacific, Trans Air Link, Trans States, Transmeridian

Source: Air Transport Association.

■ THE INDUSTRY IN 2004 ■

The Airlines

At the beginning of 2004, the US passenger airline industry comprised about 60 firms, ranging from the major airlines to small local companies (see table 3.4). The industry was dominated by seven major passenger airlines – United, American, Delta, Northwestern, Continental, US Airways, and Southwest. This dominance of the leading group was increased by their networks of alliances with smaller airlines. Thus, American, United, Delta, Northwest, and US Airways all had alliances with smaller airlines with whom they coordinated schedules and routes and allowed access to their reservations and ticketing systems. Given the perilous financial state of so many of the leading airlines, most observers expected that the trend towards consolidation in the industry would continue (see table 3.5).

Market for Air Travel

At the beginning of the twenty-first century, airlines provided the dominant mode of long-distance travel in the US. For shorter journeys, cars provided the major alternative. Alternative forms of public transportation – bus and rail – accounted for a small and diminishing proportion of journeys in excess of a hundred miles. Only on a few routes (e.g. between Washington, New York, and Boston) did trains provide a viable alternative to air.

Most forecasts pointed to continued growth in the demand for air travel – probably below the 5% annual trend rate of the past two decades, but most likely faster than the rate of population growth. The chances of any significant shift of demand to alternative modes of transport seemed slight. With Amtrak mired in financial and political difficulties, there seemed little chance that the US would develop high-speed train services similar to those of Europe and Japan. Meanwhile, the communications revolution seemed to have done little to relieve business people of the need to meet face-to-face.

Table 3.5 Operating data for the larger airlines

	Available seat miles (billions)		Load factor (%)		Operating revenue per available seat mile (cents)		Operating expense per available seat mile (cents)	
	2003	2002	2003	2002	2003	2002	2003	2002
United	136.6	148.8	76.5	73.5	9.4	9.4	10.5	11.4
American	165.2	172.2	72.8	70.7	8.7	8.4	10.2	11.1
Delta	134.4	141.7	73.4	72.0	9.9	9.4	10.5	10.3
Northwest	88.6	93.4	77.3	77.1	8.6	8.3	9.9	10.0
Continental	78.4	80.1	75.5	74.1	8.7	8.6	9.4	9.5
Southwest	71.8	68.9	66.8	65.9	8.3	8.0	7.6	7.4
US Airways	58.0	62.3	71.5	69.6	10.6	10.1	11.6	12.7
AirTran	10.0	8.3	71.1	67.6	8.9	8.6	6.5	6.6
Jet Blue	13.6	8.2	84.5	83.0	7.3	7.7	6.0	6.1
America West	27.9	27.0	76.4	73.6	9.9	9.7	7.9	8.1
Alaska	2.2	2.3	62.9	62.1	19.0	19.3	17.7	19.5

More important changes were occurring within the structure of market demand. Of particular concern to the airlines was evidence that the segmentation between business and leisure customers was breaking down. Conventional wisdom dictated that while the demand for air tickets among leisure travelers was fairly price elastic, that of business travelers was highly inelastic, allowing the airlines to subsidize leisure fares with high-margin business fares. Between 2001 and 2003, the price gap between leisure fares (restricted tickets typically requiring a Saturday night stay) and business fares (first-class tickets and flexible coach tickets without advance purchase requirements) continued to grow.⁴ The primary reason was falling leisure fares as LCCs offered increasing price competition over more and more routes. However, the huge and growing premium of full-price coach and first-class fares to leisure fares was causing many companies to change their travel policies. During the 2001–03 period, the demand for first- and business-class travel slumped as business travelers traded down.⁵

Major changes were occurring within the distribution side of the industry. Historically, the primary channel of distribution of airline tickets was travel agencies – retailers that specialized in the sale of travel tickets, hotel reservations, and vacation packages. From 1996, airlines began pruning their commissions paid to travel agents with cuts from 10% to 8%, then to 5%. In 2001 Northwest led the way in withdrawing standard rates of commissions from independent travel agents altogether, and was followed by Continental, American and Delta in 2002. Sales commissions were still paid to larger travel agents, but only on a selective basis. By 2003, commissions paid by the airline companies amounted to only 1.7% of the industry's operating expenses (see table 3.7 below).

Meanwhile the companies were developing their direct sales organizations using both telephone and Internet reservations and ticketing systems. However, the airlines were slower than e-commerce start-ups in exploiting the opportunities of the Internet. Despite the launch of Orbitz (the airlines' own online reservations service) in June 2001, by June

Table 3.6 The cost structure of the US airline industry, 2002: breakdown by activity

	Percentage of total operating costs
Flying operations	30.1
Aircraft and traffic servicing	15.9
Maintenance	12.2
Promotion and sales	9.3
Transport related	10.0
Passenger services	8.3
Administrative	7.5
Depreciation and amortization	6.7
TOTAL	100.0

Source: Air Transport Association.

2002, Expedia, Travelocity, Cheap Tickets, Priceline, and a host of other "e-tailers" had established themselves as leading online sellers of air tickets. Not only did their size allow them to wield greater bargaining power than traditional travel agencies, but also they provided consumers with unparalleled transparency of prices permitting the lowest price deals to be quickly spotted. Meanwhile, the traditional travel agent sector was consolidating rapidly as small independents closed and global leaders such as American Express and Thomas Cook acquired rivals. In attempting to grow their sales through their own web sites and telephone sales services, the major airlines were again imitating the LCCs who had long focused upon direct sales in order to avoid commissions.

Airline Cost Conditions

Less than one-third of airline operating costs are accounted for by flying operations: servicing and maintenance account for almost the same proportion of costs as flying operations (see table 3.6). In terms of individual cost items, labor costs are by far the biggest, followed by fuel and the depreciation on aircraft (see table 3.7). A key feature of the industry's cost structure was the very high proportion of costs that are fixed. For example, because of union contracts, it was difficult to reduce employment and hours worked during downturns. The majors' need to maintain their route networks added to the inflexibility of costs – the desire to retain the integrity of the entire network made the airlines reluctant to shed unprofitable routes during downturns. An important implication of the industry's cost structure was that, at times of excess capacity, the marginal costs of filling empty seats on scheduled flights were extremely low.

LABOR

The industry's labor costs are boosted by the high level of employee remuneration – average pay in airlines was 45 percent higher than the average for all private industries in 2003. Labor costs were also boosted by low labor productivity that resulted from rigid

Table 3.7 Airline costs by expense item, 1991 and 2003

	Cost index (1982 = 100)		% of total operating expenses	
	1991	2003	1991	2003
Labor cost	129	210	32.5	37.1
Fuel cost	89	81	14.5	12.6
Fleet cost	187	317	8.6	10.0
Interest cost	81	52	2.4	3.1
Aircraft insurance	81	423	0.2	0.2
Non-aircraft insurance	241	591	0.5	1.1
Maintenance materials	183	92	3.4	1.5
Landing fees	153	214	1.9	2.3
Advertising and promotion	94	42	1.0	0.9
Sales commissions	76	28	6.2	1.7
Other	127	169	28.8	29.5

Source: Air Traffic Association.

working practices agreed with unions. Most airline workers belong to one of a dozen major unions, the Association of Flight Attendants, the Air Line Pilots Association, the International Association of Machinists and Aerospace Workers being the most important. These unions have a tradition of militancy and have been highly successful in negotiating pay increases far above the rate of inflation despite intense competition, falling real ticket prices, and the financial weakness of the industry. Labor relations in the industry have been historically adversarial, with work stoppages and strike threats becoming increasingly frequent as contracts come up for renewal. In summer 2000, United pilots refused to work overtime, resulting in delays and canceled flights. The outcome was a 28 percent pay rise for pilots agreed just before United announced a \$600 million loss for the first half of 2001.

During 2002 and 2003, the threat and reality of bankruptcy resulted in widespread negotiation of union contracts. American avoided bankruptcy in 2003 primarily because of pay concessions by unions, while United's unions agreed wage cuts of between 4% and 18% and allowed the company the flexibility to use small regional jets on routes previously flown by larger jets.⁶

FUEL

How much a carrier spends on fuel depends on the age of its aircraft and its average flight length. Newer planes and longer flights equate to higher fuel efficiency. Also, the fuel efficiency of different aircraft varies widely, primarily dependent on the number of engines. Fuel prices represent the most volatile and unpredictable cost item for the airlines due to fluctuations in the price of crude oil. Since January 1999 crude prices have

fluctuated between \$14 and \$40 a barrel. Although there is strong competition between different refiners in the supply of petroleum products (including jet fuel), ultimately, fuel prices depend upon the cost of crude, the level of which is determined by the OPEC cartel. As OPEC has become increasingly effective in enforcing adherence to production quotas among its members, so the price of crude has remained high.

EQUIPMENT

Aircraft were the biggest capital expenditure item for the airlines. At prices of up to \$150 million apiece (the A380 will be over \$200 million), the purchase of new planes represented a major source of financial strain for the airlines. While Boeing and Airbus competed fiercely for new business (especially when, as in 2002-04, they had massive spare capacity), aggressive discounts and generous financing terms for the purchase of new planes disguised the fact that a major source of profits for the aircraft manufacturers was aftermarket sales. Over the past 20 years the number of manufacturers of large jets declined from four to two. Lockheed ceased civilian jet manufacture in 1984; McDonnell Douglas was acquired by Boeing in 1997. The leading suppliers of regional jets were Bombardier of Canada and Embraer of Brazil. In 2002, the third regional jet manufacturer, Fairchild Dornier, went bankrupt and was acquired by D'Long, a Chinese investment firm.

AIRPORT FACILITIES

Airports play a critical role in the US aviation industry. They are hugely complex, expensive facilities and few in number. Only the largest cities are served by more than one airport. Despite the rapid, sustained growth in air transport over the 25 years since deregulation, only one major new airport has been built – Denver. Most airports are owned by municipalities and can generate substantial revenue flows for the cities. Landing fees are set by contracts between the airport and the airlines, and are typically based upon aircraft weight. Although airports are required to base landing fees on the basis of cost, calculations are problematic given the difficulty of determining the appropriate capital costs. In 1993, Los Angeles International airport raised its landing fees by 200 percent, and increased them again by 33 percent in 1995. Threatened with the withdrawal of their landing rights, the airlines soon fell into line. Landing fees and terminal rents increased substantially over the past decade. In 2002, the airlines paid \$1.47 billion to US airports in landing fees.⁷

Four US airports – JFK and La Guardia in New York, Chicago's O'Hare, and Washington's Reagan National – are officially "congested" and takeoff and landing slots are allocated to individual airlines where the airlines assume de facto ownership. Growth of air travel is likely to increase problems of congestion and increase the value of takeoff and landing slots. At London's Heathrow airport, slots have been traded between airlines at high prices: American and United paid more than \$27 million each for PanAm's takeoff/landing slots; Qantas paid BA \$30 million for two slots.⁸

COST DIFFERENCES BETWEEN AIRLINES

One of the arguments for deregulation had been that there were few major economies of scale in air transport; hence large and small airlines could coexist. Subsequently, little evidence has emerged of large airlines gaining systematic cost advantages over their smaller rivals. However, there are economies associated with network density – the greater the number of routes within a region, the easier it is for an airline to gain economies of utilization of aircraft, crews, and passenger and maintenance facilities. In practice, cost differences between airlines are due more to managerial, institutional, and historical factors rather than the influence of economies of scale, scope, or density. The industry's cost leader, Southwest, built its strategy and management systems around the goal of low costs. By offering services from minor airports, with limited customer service, a single type of airplane, job-sharing among employees, and salary levels substantially less than those paid by other major carriers, Southwest achieves one of the industry's lowest costs per available seat mile (CASM) despite flying relatively short routes. Conversely, US Airways has the highest operating costs of the majors. Its high costs were partly a result of external factors – short routes, smaller planes, and routes concentrated on the eastern seaboard with its frequent adverse weather conditions – but mainly the consequence of managerial factors such as highly restrictive labor agreements, poor employee relations, and deficiencies in operational management. Both companies' cost positions are the result of history – US Airways is a product of a regulated environment where unions were allowed to gain great power and where rigidities and inefficiencies became institutionalized. Southwest was a product of deregulation where the driving forces behind the airline were customer satisfaction, entrepreneurial spirit, and stockholder return.

A critical factor determining average costs was capacity utilization. Because most costs, at least in the short run, were fixed, profitable operation depended upon achieving break-even levels of capacity operation. When airlines were operating below break-even capacity there were big incentives to cut prices in order to attract additional business. The industry's periodic price wars tended to occur during periods of slack demand and on routes where there were several competitors and considerable excess capacity.

Achieving high load factors while avoiding ruinously low prices is a major preoccupation for the airlines. During the late 1990s, all the major airlines adopted yield management systems – highly sophisticated computer models that combine capacity and purchasing data and rigorous financial analysis to provide flexible price determination. The goal is to earn as much revenue on each flight as possible. Achieving this goal has meant a proliferation of pricing categories and a plethora of special deals ranging from "weekend Internet specials" to the auctioning of tickets over Internet auction sites such as eBay.

Entry and Exit

Hopes by the deregulators that the US airline business would be a case study of competition in a contestable industry were thwarted by two factors: significant barriers to both entry and exit, and evidence that potential competition was no substitute for actual competition in lowering fares on individual routes. While the capital requirements of setting up an airline can be low (a single leased plane will suffice), offering an airline service requires setting up a whole system comprising gates, airline and aircraft certification, takeoff and landing slots, baggage handling services, and the marketing and distribution of tickets. At several airports, the dominance of gates and landing slots by a few major carriers made entry into particular routes difficult and forced start-up airlines to use secondary airports. Yet, despite the challenges of entry barriers and the dismal financial performance of the industry there seemed to be no shortage of willing entrepreneurs attracted to the apparent glamour of owning an airline. In 2004, Britain's Richard Branson announced plans to establish a new LCC, Virgin USA.⁹ Looking further ahead, large-scale entry was also a possibility if a new airline agreement between the US and the EU lifted US restriction on European airlines either acquiring US airlines or offering internal services within the US.

A major reason for the chaotic competitive conditions in the industry has been the barriers to exit that prevent the orderly exit of companies and capacity from the industry. The tendency for loss-making airlines to continue in the industry for long periods of time can be attributed to two key extra barriers: first, contracts (especially with employees) give rise to large closure costs; second, Chapter 11 of the bankruptcy code allows insolvent companies to seek protection from their creditors (and from their existing contracts) and continue operation under supervision of the courts. A critical problem for otherwise financially healthy airlines was meeting competition from bankrupt airlines which had the benefit of artificially lowered costs.

■ FUTURE PROSPECTS ■

Looking to the future, any feelings of relief over surviving the turmoil of 2003 were tempered by apprehensions about the future. In the absence of any new disruptions to the industry caused by global strife or macroeconomic turbulence, demand growth of 6 percent seemed feasible in 2004. Yet, such stability seemed elusive during the first quarter of 2004. The US economic situation remained precarious – a record current account deficit and projections of a rapidly escalating federal deficit looked likely to undermine the 2004 economic recovery. Politically, the industry remained exposed to international events, the March terrorist bombing in Madrid providing a stark reminder of this vulnerability.

For the major airlines, efforts to address the severe financial problems of their companies remained focused upon cost cutting. During 2002 and 2003, American succeeded in cutting its annual costs by \$4 billion, and claimed that this was just a start in what it described as "the largest consensual restructuring in the history of the airline industry." Yet, for all new-found eagerness for cost reduction, most industry commen-

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tators were skeptical over the industry's capacity for substantial and sustained cost reduction.

A study by McKinsey consultants argued that the major airlines had limited scope for radical cost cutting. New wide-body airliners cost between \$80 million and \$150 million each – they impose a heavy ongoing cost whether used or not. The airline unions also show little inclination to give up their hard-won privileges in relation to pay, benefits, and working conditions. The 20 percent reduction in available seat miles by the airlines following September 11 was achieved mainly by lower utilization of active aircraft – the resulting cost reductions were modest. Moreover, some costs – notably the costs of insurance, security, and fuel – increased sharply during 2002–4. Even as the airlines were cutting capacity during 2002 and 2003, their fleets were augmented by the delivery of aircraft ordered prior to September 2001.¹⁰

The McKinsey study also noted that the problems had not all been on the cost side. A critical determinant of profitability is passenger yield – the price paid for each passenger-kilometer flown. A key factor causing yield to deteriorate was the contraction in business travel. Although business men and women continued to travel, typically they were doing so in coach class – often at the cheapest available fare. By 2003 the proportion of passengers in the premium sections of the cabin had fallen to around 20 percent as compared to around 35 percent in 1999. As increased security increased the inconvenience of scheduled air travel, so corporate jets became an increasingly attractive alternative for top executives. The McKinsey consultants also pointed to the possibility that videoconferencing might finally take off as an alternative to face-to-face meetings, especially with the lower cost and increased convenience of web-based conferencing.¹¹

The other factor depressing the yields (and overall revenues) of the established airlines was the rapid growth in competition from the budget airlines during 2002–4. Despite depressed market conditions, 2002 and 2003 saw unprecedented growth in the number and size of America's low-cost airline companies. While Southwest continued its steady expansion, its smaller imitators – JetBlue, AirTran, America West, and Frontier – grew aggressively and rapidly. Several long-established regional carriers transformed themselves into budget airlines. Atlantic Coast Airlines became Independence Air and, instead of being a feeder and partner for United Airlines, emerged as its vigorous competitor. *The Economist* estimated that between 2000 and mid-2004, the budget airline sector had grown by 44 percent.¹² This expansion looked set to continue: in June 2004, the major airlines had 150 new jets on order; the budget airlines had orders totaling 200.

The ability of the low-cost carriers to take market share from the major airlines was not simply a result of non-union labor. It was the result of a business model and set of operating practices that were not a legacy of a bygone era of regulation. According to *The Economist*: "The cost advantages enjoyed by low-cost carriers are striking. Flexible workforces mean that airlines such as Southwest need only 80 workers to fly and support each aircraft, compared with 115 or more at a traditional network carrier. For passengers, the clearest evidence of the rival cost structures is the way the cabin staff of low-cost carriers parade rubbish bags before and after each landing, performing the task assigned by the network carriers to an expensive, standby cleaning crew."¹³ As a

result, it was the budget airlines that were increasingly in control of pricing on a growing number of routes.

If the established network carriers follow American's lead and are successful in reducing costs, this may make them better able to compete with the low-cost carriers. But would it make much difference to industry-wide profitability? As long as competition in the industry remains strong, it seems likely that the major beneficiaries of cost reductions would be airline customers who would receive lower fares. For this reason, some industry insiders believe that the industry's best chances for improved long-run profitability lie with measures that would reduce the intensity of competition in the industry, either through mergers or through some form of regulatory intervention by government.

NOTES

1. For a review of contestability as applied to the airline industry, see S. Borenstein, "The evolution of US airline competition," *Journal of Economic Perspectives*, Vol. 6, No. 2, 1992, pp. 45-73.
2. "Fly me to the moon," *The Economist*, May 4, 2002, p. 80.
3. Ibid.
4. American Express reported that in 2003, the typical business fare (a flexible coach ticket with no advance purchase requirement) was about six times the lowest discount fare. Only six years ago, the ratio was just over two and a half times.
5. "Saturday night fever," *The Economist*, April 20, 2002, p. 72.
6. "Talking Turkey," *The Economist*, November 28, 2002, p. 74.
7. Air Transport Association, *Airline Handbook*, 2000.
8. "Special Report: Soaring Cost of Touching Down," *The Times*, London, February 24, 2004.
9. "Richard Branson's Next Big Adventure," *Business Week*, March 8, 2004.
10. Peter R. Costa, Doug S. Harned, and Jerrold T. Lundquist, "Rethinking the aviation industry," *The McKinsey Quarterly*, No. 2, 2002.
11. Ibid.
12. "Low-cost Airlines: Turbulent Skies," *The Economist*, July 8, 2004, Special Section.
13. Ibid.