

GLOBAL AVIATION ALLIANCES

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There are three driving forces creating growth in aviation alliances: privatization, globalization, and concentration. According to the U.S. General Accounting Office, the privatization of 26 previously government-owned airlines was complete or in the process of completion, as of January 1992. In addition, 20 other airlines, including Qantas, El Al, and Alitalia, are moving toward privatization. Recently the 20 airlines that form the Chinese group CAAC began to consider similar steps.

The benefits of privatization include 1) access to capital and foreign investment, 2) opportunities for career growth and profit-sharing for airline employees and managers, and 3) funds provided directly to governments (and reduction of government subsidies paid to airlines) as new organizations purchase shares.

Globalization is becoming a powerful force in fostering alliances as ownership of airlines moves across borders. DHL Airways, for example, has Japanese, German, British, Chinese, and American shareholders. Figure 36 illustrates the spectrum of ownership in airlines today. Iberia, Saudi Arabia, Olympus, TAP, and Aer Lingus are still 100 percent government-owned. The Italian government, on the other hand, has recently reduced its ownership in Alitalia to 21 percent. KLM, SAS, and Lex Air are in the 50-percent range of private

Airline Companies	Home Nation	Government ownership %
Iberia	Spain	100.
Saudia	Saudi Arabia	100.
Air France Group	France	99.
Sabena	Belgium	88.
Alitalia	Italy	79.
Lufthansa	Germany	59.
Singapore Airlines	Singapore	54.
KLM Royal Dutch	Netherlands	38.
Swissair	Switzerland	20.
Cathay Pacific	Hong Kong	13.
Japan Airlines	Japan	0.
British Airways	United Kingdom	0.
Air Canada	Canada	0.

International Aviation is regulated by Bilateral Agreements
For example, the U.S. has 72 bilateral agreements with
95 nations dealing with aviation.

FIGURE 36 Globalization.

ownership. Japan Airlines, British Airways, and Air Canada are wholly owned by a variety of private shareholders around the world.

Concentration of operations and assets has been a long-term factor favoring alliances. The traffic carried by the three largest airlines — American, United, and Delta — is more concentrated than six years ago. The Big Three accounted for 41 percent of passenger revenue miles in 1987. For the first six months of 1993, they accounted for 57 percent of the revenue passenger miles and 58 percent of the seat miles. A significant feature of concentration is purchase of routes. American's Airlines bought Eastern's Latin American routes for \$471 million and TWA's US-UK routes for \$445 million. Delta acquired several European routes from Pan Am for \$526 million. United acquired Pan Am's Pacific routes for \$716 million and its US-UK routes for \$400 million. These acquisitions pose a threat to other world airlines that are seeking alliances among themselves to protect their home markets and strengthen their competitive positions.

The global economy also plays an important role in the formation of aviation alliances. When times are poor, many airlines seek partners rather than acquisitions for a key reason: it is usually cheaper to develop and alliance than to pay the merger premiums.

According to *The Economist*, 12 of the largest nations are experiencing either negative or zero economic growth in 1993. Forecasts by the same economists now suggest that nine of these nations are likely to grow by only 1 or 2 percent in real terms during 1994. If the global economy recovers as slowly as predicted, aviation alliances may continue to multiply.

Alliances span continents and include equity investments or marketing arrangements such as codesharing. (Figure 37) Equity global alliances (Figure 38) are the most complex partnership agreements in that they involve transfers of cash, stock, assets, or debts among airlines. Equity roles range from the 5-percent share of Austria in the Alcazar alliance to the 51-percent stake of Deutsche Aerospace in Fokker and the 54-percent equity that KLM and Northwest have in Wings. The rationale for equity alliances is market access, production sharing, or cost sharing.

A primary reason for regional alliances is to strengthen or protect the home market. (See Figure 39.) Some alliances also seek a link to international markets. A case in point is Mexicana and Aeromexico. Mexicana plans to focus on the domestic Mexican market while its partner, Aeromexico, is seeking to build international markets linked to Mexico.

Alliances across continents include investments and marketing arrangements

<u>Americas</u>	<u>Europe</u>	<u>Asia</u>	<u>Scope</u>
Delta	Swissair	Singapore	5% each
	British Airways	Qantas	25% in Qantas
USAir	British Airways		\$300 m in US
Northwest	KLM		54% in Wings
DHL	Lufthansa	Japan Airlines	\$500 m in DHL
	British Aerospace	Taiwan Aero.	\$500 m in AVRO
General Electric	SNECMA, MTU (FRG)		turbofan engine
Delta	Swissair		code sharing
United	BMA of Brazil		code sharing
American	BMA of Brazil		code sharing
United	British Airways		code sharing FF
Aeromexico	France		code sharing FF

FIGURE 37 Global alliances.

Equity cross-border aviation alliances range from 5 to 55% investments

<u>Aviation Partners</u>	<u>Equity investments</u>	<u>Rationale</u>
Aeromexico, Mexicana	55% stake in Mexicana	Market access
KLM, SAS, Swissair		
Austria	30-30-30-10% in Alcazar	Market access
DHL-JAL-LH	\$500 m 25%-25%-5%	Express mail, freight
Air Canada, Continental	\$450 m 27.5% in CO	US, C market access
British, Taiwan Aero	\$500 m	Jet aircraft production
Deutsche Aero, Fokker	51% in Fokker	Regional jet production
KLM, Northwest	54% in Wings	Market access
Swissair, Singapore Delta Airlines	5% cross investments	Market access
British, Qantas	25% by BA in Qantas	Market access
AAL, Canadian Air Intn	\$195m 25% by AMR	Market access, tech ex.
British, TAT	49.9% in TAT	Market access
British, USAir	\$300 m, 21.8% in US	Market access

FIGURE 38 Equity global alliances.

Firms in regional alliances frequently seek to strengthen home markets.

<u>Partner</u>	<u>Partner(s)</u>	<u>Region/Nation</u>	<u>Goals</u>
Aeromexico	Mexicana	Mexico	Mexico, Latin America
KLM	Swissair	Europe	Alcazar in Europe
Austrian	SAS		
Lufthansa	Olympic TAP	Europe	market penetration
Delta	Aeromexico	Mexico	market penetration
Delta	Varig of Brazil	Brazil	market penetration
American	Canadian Air Intn	Canada	25% in CAI
Aeromexico	Aeroperu	Peru	47% in Aeroperu
Deutsche	Fokker	Europe	regional jets

FIGURE 39 Regional alliances.

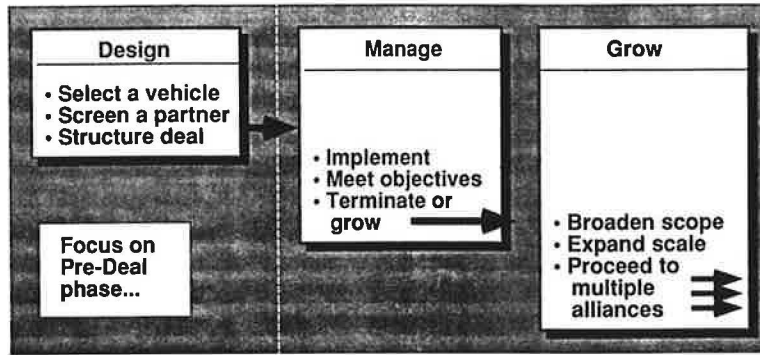


FIGURE 40 The critical phases in aviation alliances.

The formation of aviation alliances has three important phases, as shown in Figure 40. The critical phase is the first — the pre-deal agreement — which (in order of importance) consists of three steps: select the right partner, select the right vehicle, and agree on the right terms. About 80 percent of the problems encountered by alliances later on arise because some step in the pre-deal phase was neglected or ignored.

A current example of problems that develop in the pre-deal phase is the alliance of British Airways and US Air. The initial reasons for the partnership included the need for capital (US Air lost almost \$1 billion between 1989 and 1992), access to east coast cities in the United States and to Heathrow in England, and marketing power. Concerns about equal access of U.S. carriers to Heathrow and competitive rivalry caused the partners to consider a new vehicle (step 2) and to make key changes in the terms of the alliance (step 3). Thus alliance formation was significantly delayed and equity funding substantially reduced as a result of unexpected problems in the first phase. Initially, British Airways' investment was to comprise \$750 million, with a 44-percent equity stake and 20-percent voting role in US Air. This offer was withdrawn in favor of an investment of \$300 million, with a 24.6-percent equity role and a 19.9-percent voting share in US Air.

Management of an alliance is the second phase. The British Airways-US Air alliance is now (as of September 1993, ed.) in the first six months of phase two. The partners have added U.S. cities that connect directly to London: eight in July 1993 and two more as of September 1993. The alliance is also adding gateways, and soon 13 U.S. gateways and 65 cities will be served.

Growing an alliance is the third phase, which involves broadening the scope of the alliance. In the case of British Airways, this includes codesharing with United Airlines in the U.S. market, participation in the Galileo computer reservation consortium in Europe, and entering into a joint equity venture with Qantas in

Australia. Growth of an alliance can also involve expanding the scale of operation or moving into multiple relationships in different markets with other airlines.

The debate regarding cross-border equity alliances is likely to heat up in the years ahead. While foreign investment in U.S. airlines provides needed capital to carriers, increases the number of jobs, and costs less than a full merger, many analysts believe that global airline partnerships have drawbacks for the domestic carrier. They may dilute the power and control of the domestic airline in its own market, provide the foreign carrier with too much control, favor the foreign country's position in subsequent bilateral agreements, and provide a subsidy of foreign-government money to "free market" economies. None of these factors is likely to deter the management of airlines from considering cross-border alliances as long as the three driving forces are strong.

Market forces are more likely to influence the pace and size of alliances in the future. We have found in our research that six key premises will be important in forming future alliances.

1. It is imperative to select the right partner and the right vehicle before discussing the terms of an alliance.
2. The value created for each aviation partner is more important than alliance longevity.
3. We predict that most aviation managers will be involved in an alliance in the next five years, or be competing with one.
4. Aviation alliances will increase in number, regardless of failures and contrary to warnings.
5. Cross-border alliances will expand despite the difficulty in dealing with differences in culture, language, and performance measures. In fact, Murray Weidenbaum has found that alliances flourish where government restrictions on acquisitions and foreign investment are strict.
6. Alliances of the future will be separated into two groups: mega-alliances and business-unit alliances.

There will be a large number of business-unit alliances in airlines and aviation activities.

However, there are also tales from the dark side of alliances. In the past six years we have uncovered several pitfalls to be avoided.

- Most financial expectations fail to be realized in the first or even the second year of aviation alliances.
- Most alliances terminate because of competing services and selection of the wrong partner.
- Many alliances end up as acquisitions. It is a good idea to think about this in phase one and not wait until phase two.
- Virtually no alliance meets all its goals.
- It will take twice as long as expected to meet some of the original goals, three times as long to adjust to the new ones, and four times as long to deal with critical issues.
- "Have a good fight with your partner before you sign the deal" is advice from several experienced alliance partners who have developed useful ways to resolve conflicts.

AIRLINE CONSOLIDATION: CONSUMER WELFARE AND POLICY IMPLICATIONS

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An Economic Model of Airline Concentration

While at the University of Pennsylvania, one of the authors (Dong Liu) in collaboration with Elizabeth Bailey developed a model of airline concentration to address several key questions about the impact of airline deregulation on air service and the future of the airline industry.

- Why has the airline industry become increasingly concentrated since deregulation?
- What does this concentration imply for total consumer welfare?
- What are the implications for future public policy?

The central conclusion of the analysis using this model is that the airline industry is unlikely to have a large number of air carriers when it reaches a state of equilibrium. First we will discuss what this concentration

means with regard to airline prices and consumer welfare. Later we will examine the implications for future public policy.

The usual approach to these issues is to collect lots of data on prices, service levels, etc. and to analyze past trends. We call this the "data analysis approach." This approach is straight-forward, and it can be quite convincing. But, without an explicit economic model to provide a structure for the empirical analysis, this approach suffers at least two drawbacks.

First, this approach cannot tell whether or not the airline industry is in equilibrium. Without this information, an analysis of past trends tells little about the future of the airline industry. For example, just because the price of air transport is low this year does not mean the price will be low next year. Just because we have five major carriers this year does not mean we will have five next year, or six or four.

Second, this approach cannot tell whether the airlines are oversupplying or undersupplying air transport capacity and whether they are overcharging or undercharging for these services. As a result, many diverse interpretations can be made of the same descriptive data.

The approach that we will describe today is different. We call it compliments the data analysis approach. I call this approach a "radical equilibrium model." Basically, this model simulates rational behavior of airlines on one hand, and passengers on the other. The simulation describes behavior by the airlines and passengers that would be consistent with an equilibrium or stable economic state. The insights from this equilibrium modeling approach complements the data analysis method. We use this model to describe the airline industry's equilibrium states and the corresponding welfare implications. The following is a summary of the major findings. A full technical description of the model is in paper prepared by Elizabeth and Liu.¹

First we found that under the airlines' hub-and-spoke network structures, only a very small number of major carriers can coexist in equilibrium. In other words, the airline industry will remain concentrated no matter how large the total demand becomes. Later we will show how this small number of airlines in equilibrium varies under different conditions.

Second, we found that, as the industry approaches equilibrium through a series of consolidations and bankruptcies, total consumer welfare increases rather than decreases. This is true even if prices increase along the way. Why? The answer has to do with the travelling public's preference for frequent service — more precisely, frequent, single-carrier services to a