PERGAMON

Journal of Air Transport Management 8 (2002) 401–407

Journal of
AIR TRANSPORT
MANAGEMENT

www.elsevier.com/locate/jairtraman

Airline alliances—who benefits?

S.C. Morrish, R.T. Hamilton*

Department of Management, University of Canterbury, Private Bag 4800, Christchurch 1, New Zealand

Abstract

The advent of global airline alliances in the 1980s gave rise to concerns that increased monopoly power of major carriers would lead to large and sustained producer surpluses. These global alliances now enjoy dominant market shares in the industry. This review examines some 15 years of alliance experience and finds no conclusive evidence that alliance membership has yielded monopoly profits to the airlines. Improvements in terms of load factors and general productivity levels have, for the most part, been accompanied by fare reductions of similar magnitude, resulting in only modest gains to the carriers.

Keywords: Airline alliances; Monopolies; Fare levels

1. Introduction

This paper reviews the effect of alliance membership on the performance of international airlines. An airline 'alliance' is any collaborative arrangement between two or more carriers involving joint operations with the declared intention of improving competitiveness and thereby enhancing overall performance. Despite a history of instability and failure, alliances are now prevalent among international airlines.

Such alliances began on a global scale in the late 1980s with the first Trans-Atlantic alliances.[1] Oster and Pickerell (1986) reported that by 1985, nearly all of the largest 50 commuter carriers had formed code-sharing alliances with a major airline. The companies participating accounted for over 75% of the passengers carried by the commuter airline industry. Other carriers then had little choice because, as Dresner and Windle (1996, p. 10) warned, 'airlines that do not enter into alliances will find themselves at a competitive disadvantage unable to generate traffic from their alliance competitors'. They argued that since alliance groupings with member carriers from all parts of the globe in the future will be few, competition will be between alliances rather than between the carriers. The failure to join a global alliance would leave individual carriers isolated and at a competitive disadvantage (Button et al., 1998).

A majority of airline alliances is route based. Park (1997) distinguished two major types of alliances as being either complementary or parallel. The main distinguishing features are that complementary alliances have non-overlapping routes, whereas parallel alliance routes overlapped. Apart from routes, the most common areas of collaboration involve code sharing; block spacing; shareholdings; and franchising. Code sharing allows an airline to sell seats on a partner's flight under its own designator code, while block spacing is an agreement under which one airline allocates a block of seats on its flights to a partner. Button et al. (1998) suggests that block spacing can generate economies of density for a carrier because it allows for the use of larger aircraft. Shareholding (cross-equity holding) is usually subject to regulation if it involves an airline from another country. Hamill (1993, p. 39) suggests, 'acquiring shareholdings in airlines of other countries allows carriers access to each other's route network, cross-border operations and improved customer service between long-haul and local follow-on flights'. This strategy also protects subsidiaries from being lured to join other alliance networks. On the other hand, franchising, a strategy widely used by British Airways and to a lesser extent by Qantas Airways has the franchisee paying a royalty to the franchiser in exchange for the privilege of using the latter's marketing package. This practice is more common in other industries, but 'in

*Corresponding author.
E-mail address: b.hamilton@mang.canterbury.ac.nz (R.T. Hamilton).

[1] In 1989, the European Quality Alliance (Air France, SAS and Swissair), the Global Excellence Alliance (Delta Airlines, Singapore Airlines and Swissair) and the KLM/Northwest Airlines Alliance were formed.

0969-6997/02/$ - see front matter
PII: S0969-6997(02)00041-8

aviation, it allows major carriers to spread their brand name and generate revenues on thin routes without a commitment of major capital investments' (Button et al., 1998, p. 107). In addition, alliances may also feature a series of joint agreements relating to sales and marketing; purchasing and insurance; catering; ground handling; and aircraft maintenance.

Global airline alliances now have dominant market shares in the industry. (Oum et al., 2000, p. 22) reports that emerging global alliance groupings collectively accounted for 63.6% world share of passenger traffic (RPK), 55.8% of passenger numbers and 58.4% of group revenues. To put this into a wider context, there are over 1200 airline operators in the world. By 2002, four groups had emerged, namely: Star Alliance, One World Alliance, the Sky Team Alliance and the Qualiflyer Group (Table 1).

This raises the issue of industry dominance. At the outset, Greenberg (1990) expressed concern that route domination by a small group of the largest mega-carriers could threaten increasing airfares and decreasing airline service throughout the world. He suggested that increases in the number of airline alliances would lead to a decreased number of airlines. This scenario may be likely if the strategic alliances are capable of producing significant advantages to members: but are they?

Although strategic alliances are increasingly perceived as strategic weapons even for competing within a firm's core business (Harrigan, 1987), they are enormously complex to manage successfully and they are frequently subject to instability, poor performance and premature dissolution (Parkhe, 1993). In support of this, studies have reported high alliance failure rates of up to 70% (Geringer and Herbert, 1989; Harrigan, 1985; Porter and Fuller, 1986; Stratford, 1992; Noble et al., 1995). A widely reported alliance collapse is that of the Alcazar alliance (Cameron, 1994; Chambers, 1994; Reed, 1994). This alliance between Austrian, KLM, SAS and Swissair failed because of the partners' disagreement over a US partner. KLM insisted on staying tied to Northwest while the other three partners wanted Delta. In a commentary on alliance failures, Flight International (2000, p. 3) suggests that 'the prospect of alliance instability is greater now than ever'. It identified a number of notable failures:

- the KLM/Alitalia collapse;
- the Swissair break from Delta following Delta's tie-up with Air France;
- the Austrian Airlines split from its European partners to join the Star Alliance;
- the termination of Canadian Airlines' membership of One World after being taken over by Air Canada.

Alliances come at a high financial cost as well as risk to reputation from failure. It is reported, for example (Aviation Week and Space Technology, 2000), that KLM is trying to recover from Alitalia the 100 million euros it invested for the development of their hub at the Malpensa airport while Alitalia is claiming compensation of 250 million euros from KLM. Meanwhile, Austrian Airlines' switching of alliances is costing the airline around US $40 million (Buyck, 2000). Alliances involve disruption with such activities as relocation and general harmonisation and integration of information technology and general systems.

In more general terms, The Economist (1995) reported results by a Boston Consulting Group study of airline alliances that found fewer than 40% of

Table 1
Major airline alliances and their member carriers in 2002

Star alliance	One world alliance	Sky team alliance	Qualiflyer group[a]
Air Canada	Aer Lingus	Aeromexico	DAT Belgian
Air New Zealand	American airlines	Air France	Crossair
All Nippon Airways	British Airways	Alitalia	TAP Portugal
Austrian Airlines	Cathay Pacific	CAS Czech Airlines	LOT Polish
British Midland	Finnair	Delta Airlines	Portugalia
Lauda Air	Iberia	Korean Air	Swissair
Lufthansa	Lan-Chile		Volare
Mexicana Airlines	Qantas		
SAS Scandinavian Airlines			
Singapore Airlines			
Thai Airways International			
Tyrolean Airlines			
United Airlines			
Varig Airlines			

[a] On 11 February 2002 the Qualiflyer group announced that it will be formally disbanded by its seven members. This follows the demise of its prime mover Swissair.
Source: alliance websites.

regional and 30% of international alliances have been successful. This was reinforced in a Goldman Sachs report (cited in Flint, 1999) that in 1997, 102 out of 127 new alliances formed were dissolved. Although firms enter agreements for the long-term, the desired mutual benefits may not always follow and can lead to premature termination.

Finally, alliances are not the only route to survival. Some non-aligned carriers such as EasyJet, Southwest, and Ryanair have achieved growth through low-cost strategies and exploiting high traffic routes. This counters the argument that, despite the commercial and regulatory hurdles to overcome, it is essential to belong to a global alliance (Flint, 1999). Collaborative arrangements affect partners' costs and revenues, and in many cases, it appears that costs come to outweigh advantages.

2. Alliances and performance

Partners in an alliance have both common and individual corporate goals. Studies of strategic alliances have measured and evaluated performance in different ways, such as alliance longevity (Beamish, 1987), in terms of meeting the objectives of individual partner firms (Dollinger and Golden, 1992; Thomas and Trevino, 1993) and by resource alignment among partner firms (Das and Teng, 2000). Other studies have used new product development (Deeds and Hill, 1996) and profitability (Cullen et al., 1995; Reuer and Miller, 1997). These measures are a combination of financial and non-financial outcomes.

A body of literature exists evaluating alliance in non-economic terms. A three-year study of 15 strategic alliances by Hamel et al. (1989) concluded that success is judged by shifts in competitive strength on both sides, and that learning from partners is paramount. In a study of New Zealand companies, Berg and Hamilton (1998) found that with marked asymmetries inevitable in international alliances, it is the learning processes within alliances that determine outcomes. Hutt et al. (2000) propose that public relations such as trust, commitment and compatibility, accelerate learning and increase the effectiveness of alliances.

There is also the issue of how the intra-firm learning that takes place within alliances mediates between the initial conditions and the outcomes of the alliances. Doz (1996) found that successful alliances are highly evolutionary and go through a sequence of interactive cycles of learning, reevaluation and readjustment. Failures on the contrary are highly inertial, with little or divergent learning between cognitive understanding and behavioural adjustment or frustrated expectations. Arino and Doz (2000) argue that failure follows after the opening of a gap between expectation and intermediate outcomes. Given this, it is important that parties to an alliance recognise it early in the collaboration and try to re-evaluate each other's position. This lessens the likelihood of misunderstanding among partners, which ultimately contributes to high instability and failure rates. Learning is viewed as important and according to Koza and Lewin (2000, p. 146), 'raising the odds of success of strategic alliances can have important performance consequences'. These odds can also be raised in some other ways. Parkhe (1993) suggests that attention to structure may help when the link between performance and alliance structure varies by partner nationality. This can be important when there are differences in the characteristics of carriers from different countries (Beamish, 1985; Geringer and Herbert, 1991, Harrigan, 1985).

3. Alliance outcomes for airlines

One explanation for the prevalence of alliances in the airline industry is that although the industry has achieved high growth rates, it suffers from intrinsically low-profit margins (Hanlon, 1999; Sissen, 1999). Consequently, carriers have had to look at a variety of strategies to improve performance. With global expansion constrained by restrictive air services agreements, strategic alliances are seen as a strategy for growth.

In the US setting, Button et al. (1998, p. 100) observed that alliances were used very early on 'as a way for jet and commuter operators to jointly develop markets in an era of tight economic regulation'. The subsequent US deregulation, economic integration of Europe, and the rise of the hub-and-spoke system brought intense pressure on competing carriers to pursue globalisation strategies in order to remain competitive. For many carriers remaining or becoming competitive meant servicing three major markets: US, Europe and Asia. While this would be possible for a single carrier to do, the level of service, and in particular the frequency of flights to some destinations, meant that airline passengers would often suffer long connection times. For the individual carrier, this would call for more investment in new fleets to provide capacity on new routes. With airline profitability already inherently low, carriers needed to look at alternative growth strategies.

In more specific terms, Button et al. (1998) suggest a number of possible reasons for alliance formation—cost savings, market penetration and retention, financial injections, infrastructure constraints, circumventing institutional constraints and market stability. More specifically, they identified four advantages of alliances:

- access to new markets by tapping into a partner's under-utilised route rights or slots;

- traffic feed into established gateways to increase load factors and to improve yield;
- defense of current markets through seat capacity management of the shared operations; and
- costs and economies of scale through resource pooling across operational areas or cost centers, such as sales and marketing, station and ground facilities and purchasing.

These collaborations also offer a way 'for alleviating the constraints on foreign market access because the commercial rights of international airlines are being governed by restrictive bilateral air services agreement' (Oum et al., 2000, p. 200). Cross-border networks enhance access to foreign markets because as Gomes-Casseres (1996) argues, they help spread cost over large volumes to give it access to skills and knowledge in different nations.

Oum et al. (2000) identified other incentives that propel airline alliances. These are expansion of seamless service networks—when market access is restricted, traffic feed between partners, increased cost efficiency—increased traffic density, shared airport facilities and shared ground staff, increased frequency of service and greater itinerary choices for passengers, exploitation of Computer Reservation System (CRS) display advantages and increased market power.

There are as yet relatively few studies of airline alliances incorporating performance outcomes (Table 2). Additionally, as Button et al. (1998, p. 100) observed 'what has been done tends to focus on North Atlantic strategic alliances and short-term implications for the carriers involved and immediate competitors'.

Some of the earliest studies were governmental and regulatory investigations commissioned in particular in the US and the UK (Gellman Research Associates, 1994; UK Civil Aviation Authority, 1994; US General Accounting Office, 1995). These studies were intended for policy-making purposes specifically relating to anti-trust and other competitive issues. Nevertheless, their results are of more general use. The main body of academic work is composed of an early assessment by Oster and Pickerell (1986); conceptual papers by Pustay (1992) and Dresner and Windle (1996); and empirical investigations by Youssef and Hansen (1994), Dresner et al. (1995), Park (1997), and Brueckner and Whalen (2000). A compilation of studies conducted by Oum et al. (2000) covers a wider range of areas.

4. Traffic volume and load factors

Improvement in connecting services is one of the benefits airline alliances can bring to the passengers. Where Youssef and Hansen (1994) found increases in the quantity of flights in Swissair/SAS hubs, Oum et al. (2000) applied a methodology for measuring the effect of alliances on passengers' schedule delay of three Trans-Atlantic alliances (KLM/Northwest; Lufthansa/United and Delta/Swissair/Sabena). Their analysis suggests that complementary alliances (where partners have non-overlapping routes) enable partners to offer higher flight frequency to those who fly beyond non-stop city pairs route, as well as to the majority of connecting passengers. Parallel alliance partners are also expected to increase flight frequencies.

While there is some evidence of increases in flight frequencies resulting from alliance agreements, this does not automatically mean that there are more users. Using traffic volume data of all North Atlantic routes[2] operated by four Trans-Atlantic alliance carriers during the period 1992–1994 Oum et al. (2000) looked at changes in traffic volumes on alliance and non-alliance routes. They found increases in traffic volume between the two intercontinental alliance gateways compared to routes linking non-alliance gateways. Specifically, alliance routes of the eight carriers studied showed traffic increases of between 6.8% and 66.8% for alliance routes. Non-alliance routes showed traffic decreases of as much as 3.2% and increases of up to 9.1%. Increases in traffic volumes were also found in Park's (1997) study in the case of complementary and parallel alliances. In addition, these increases were gained at the expense of rival airlines. These studies support the findings of Gellman Research Associates (1994) and US General Accounting Office (1995).

There is also evidence that traffic gains can occur whether carriers re-aligned their strategies or not. Using before and after alliance data covering the period from 1987–1991, Dresner et al. (1995) in their study of three alliances (1988-Continental/SAS; 1989-Delta/Swissair; 1989-Northwest/KLM) found diverse results. Both KLM/Northwest and Continental/SAS re-aligned strategies but only the former achieved some successes. On the other hand, Delta/Swissair gained increased traffic and load factors despite not having re-aligned their strategies. Whether these results can be generalised is uncertain because the study was limited to equity alliances on the Trans-Atlantic routes. Dresner et al. (1995) concluded that alliances do not appear to guarantee success in the very competitive North Atlantic environment.

The Oum et al. (2000) study also measured the effects of airline alliances on productivity. Using a productivity index computed by dividing a carrier's overall output index by its overall input index, their regression analyses showed a system-wide productivity gain of 1.7%. Here, 'major' alliances involved partner airlines linking their respective networks to gain access to other parts of the

[2] The alliances investigated were BA/USAir, Delta/Swissair, KLM/Northwest and Lufthansa/United.

Table 2
Major studies of airline alliances

Study	Analyses	Sample	Study	Findings
Oster and Pickerell (1986)	Conceptual			Nearly all the 50 largest carriers had formed code-sharing alliances with a major airline by 1985
Pustay (1992)	Conceptual			Identified the following impediments to true globalisation: infrastructure limitations, traffic rights, foreign ownership of flag carriers, antitrust, threat of government intervention to prevent emergence of global carriers
Gellman Research Associates (1994)	Counterfactual study: 2 transatlantic alliances	BA/USAir, KLM/NW, 1st qtr	1994, 1 qtr	Profitability increases for all parties with BA and KLM gaining more than their partners in terms of net profit
Youssef and Hansen (1994)	Case Study: simple linear regression	Swissair and SAS	1989–1991, 2 years	Increases in flight frequency; variation in fare levels; the strongest service levels had the lowest fare increases. Points to the re-distributive nature of alliance impacts
US General Accounting Office (1995)	Intensive interviews with key people	KLM/NW, USAir/BA, UAL/Lufthansa, UAL/ Ansett, UAL/ BMidland	1994, 1 year	All carriers in the 5 alliances enjoyed increased revenues and traffic gained at competitor's expense not industry growth
Dresner et al. (1995)	Empirical: categorical variables	Continental/SAS, Delta/ Swissair, KLM/NW	1987–1991, 4 years	Mixed successes with traffic volumes. Comment: restricted to equity alliances between US and Europe. In general, alliances did not benefit partners
Dresner et al. (1995)	Conceptual			Observed that initial alliance studies indicated little benefit to airlines but later studies showed improvement
Park (1997)	Estimated econometric models	panel data of KLM/NW Delta/Swissair/Sabena	1990–1994, 4 years	Traffic increases at the expenses of rival airlines. Complementary alliances—lowered airfares. Parallel alliances—increased airfares
Oum et al. (2000)	Empirical: econometric models; regressions	2 airlines	1986–1995, 9 years	Increased profitability, increased productivity, decrease in pricing levels
Oum et al. (2000)	Event study	Database of 58 alliances	1989–1998, 9 years	Positive abnormal return of 0.40% on event day 0
Oum et al. (2000)	Empirical: regression	Panel data of 4 major alliances	1992–1994, 2 years	Increased traffic on alliance routes
Brueckner and Whalen (2000)	Empirical	3rd qtr fare data US Department of Transportation	1999, 1 qtr	Alliance partners charge approximately 25% lower interline fares compared to those charged by non-allied carriers

global market whilst 'minor' alliances involved co-operation at the route level without combining networks. In major alliances the gain was up to 4.8%, whereas minor alliances did not produce any significant effects.

5. Fares and pricing levels

Youssef and Hansen (1994) also looked at the effect of alliances on competition. They found that it enhanced the market power of both Swissair and SAS. Competition in

the hub-to-hub markets was effectively eliminated. This was possible as both carriers held dominant positions in their respective hubs. The finding is limited to equity alliances only and is based only on one alliance.

While equity alliances may not have any significant effect on the share value of an airline, it was found they enhance the partner carrier's market power. Youssef and Hansen (1994) assessed the impact of the Swissair/SAS alliance on service quality, market concentration and fares. Comparing before and after alliance data, they found associated increases in the quality and quantity of connecting services through each partner's hubs and a slight reduction in market concentration where partners offer connecting services. With dominance in their individual hubs, Youssef and Hansen (1994) also found that fares increased in non-stop markets served by an alliance relative to non-alliance non-stop markets.

Park (1997) found fare levels increased or decreased depending on the type of alliance agreement. Using panel data over the period 1990–1994, he found that a complementary alliance (KLM and Northwest) led to lower airfares while a parallel alliance (Delta, Swissair and Sabena) led to increases. In essence, parallel alliances create cartels on certain routes that allow price increases.

The Oum et al. (2000) study on 22 international carriers found that alliances led to competitive pricing. Using a pricing index calculated by dividing total revenues by an overall output index, their regression results showed an average decrease of 1.3% in pricing. If it was a major alliance, it significantly decreased further to an average of 5.5%. A further recent study by Brueckner and Whalen (2000) found even lower price levels. Based on the third quarter fare data of the US Transportation Department, they found that alliance partners charge interline fares that are approximately 25% below those charged by non-allied carriers.

6. Profitability

Evidence that alliances increase profitability was found in the Gellman Research Associates (1994) counterfactual study of two Trans-Atlantic alliances (BA/USAir and KLM/Northwest). Based on data from the first quarter of 1994, the study adopted an econometric model that attempted to reflect the way consumers select an airline using a discrete choice framework. It found increases in profitability for all parties to the alliance although BA and Northwest gained more than their partners. BA was found to have gained almost five times more than USAir, while Northwest gained just over 50% more than KLM in terms of net profit. This study also found that the carriers increased their market share on the code-sharing route by 8–10%. There is evidence that these gains resulted from the losses of other carriers.

These results found support in a US General Accounting Office (1995) study based on interviews with key airline and government officials. This study found that the carriers in the five alliances studied (Northwest/KLM; USAir/British Airways; United Airlines/Lufthansa; United Airlines/Ansett Australia and United Airlines/British Midland) enjoyed increased revenues and traffic attributed to the alliance. These increases varied for the different carriers. There was no evidence that increases in the airlines' performance were due to growth in the industry; rather, it was found that they were gained at the expense of competing airlines. This was verified through interviews with competing airlines that reported losses due to passengers transferring to alliance carriers.

Based on regression analyses of a system-wide yearly panel data over the 1986–1995 period, Oum et al. (2000) conducted an empirical study of 22 international carriers. Using data from eight North American carriers, seven from the Asia-Pacific region and seven from Europe, they found that airline alliances reported significant positive effects on economic performance. Prices were lowered, productivity rose and profitability increased by 0.3%. This effect increased to 1.5% if it was a major alliance. Minor alliances, those involving co-operation at route level but short of combining networks, were found to have no significant effect on a carrier's profitability. Overall, these results reinforce the significance of major alliances on performance by 4.9%. Minor alliances had statistically insignificant effects (0.9%) on performance.

Another area that has received attention is the effect of airline alliances on the share value of partner carriers. Based on a database of 58 international alliances covering 1989–1998, Oum et al. (2000) conducted an event study on the effect of an alliance announcement on a partner firm's stock prices, It was found that forming alliances has a significant positive impact on the value of participating firms. They reported an average increase in the share price of 0.4% with larger and smaller partners appearing to experience a similar percentage of value increases following an announcement. Their results showed that equity investment has no significant effect on the amount of value creation. If the alliance announcement was an equity arrangement, the effect on the share price was not significant. However, if the announcement involved major areas of co-operation, the share prices rose significantly.

7. Conclusions

There is no conclusive evidence to date that major airlines have been able to use global alliances to restrict

competition and boost their own profitability. The airline industry operates on thin margins and the prevalence of alliances can be interpreted as a means to preserving these margins rather than an attempt to generate large producer surpluses. The airlines do appear to gain in terms of load factors and from a general rise in productivity levels, but these have been offset by increased flight frequencies and, more particularly, lower air fares.

References

Arino, A., Doz, Y., 2000. Rescuing troubled alliances…before it's too late. European Management Journal 18 (2), 173–182.

Aviation Week and Space Technology, 2000. KLM Royal Dutch Airlines and Alitalia. August, p. 24.

Beamish, P.W., 1985. The characteristics of joint ventures in developed and developing countries. Columbia Journal of World Business 20 (3), 13–19.

Beamish, P.W., 1987. Joint ventures in LCDs: partner selection and performance. Management International Review 27, 23–27.

Berg, J., Hamilton, R.T., 1998. Born to fail? International strategic alliance experiences of New Zealand companies. Journal of International Business and Entrepreneurship 6 (1&2), 63–76.

Brueckner, J., Whalen, T., 2000. The price effects of international airline alliances. Journal of Law and Economics 43 (2), 503–545.

Button, K., Haynes, K., Stough, R., 1998. Flying into the Future: Air Transport Policy in the European Union. Edward Elgar, Cheltenham, UK.

Buyck, C., 2000. The big move. Air Transport World 37 (6), 49–53.

Cameron, D., 1994. Delta takes stock of the barrel. Air finance Journal 158, 4–5.

Chambers, A., 1994. 'Merger,' they say. Air Transport World 31 (1), 95.

Cullen, J.B., Johnson, J.L., Sakano, T., 1995. Japanese and local partner commitment to IJVs: psychological consequences of outcomes and investments in the IJV relationship. Journal of International Business Studies 26, 91–115.

Das, T.K., Teng, B.S., 2000. A resource-based theory of strategic alliances. Journal of Management 26 (1), 31–61.

Deeds, D.L., Hill, C.W.L., 1996. Strategic alliances and the rate of new product development: an empirical study of entrepreneurial biotechnology firms. Journal of Business Venturing 11, 41–55.

Dollinger, M.J., Golden, P.A., 1992. Interorganizational and collective strategies in small firms: environmental effects and performance. Journal of Management 18, 695–715.

Doz, Y., 1996. The evolution of cooperation in strategic alliances: initial conditions or learning processes? Strategic Management Journal—Supplement 17, 55–83.

Dresner, M., Windle, R., 1996. Alliances and code-sharing in the international airline industry. Built Environment 22 (3), 201–211.

Dresner, M., Flipcop, S., Windle, R., 1995. Trans-Atlantic airline alliances: a preliminary evaluation. Journal of the Transportation Research Forum 35, 13–25.

Flight International, 2000. Unstable alliances. May 15, p. 3.

Flint, P., 1999. Alliance paradox. Air Transport World 36 (4), 33–36.

Gellman Research Associates, 1994. A study of international airline code sharing. Office of Aviation and International Economics, Office of the Secretary of US Department of Transportation, Washington, DC.

Geringer, J.M., Herbert, L., 1989. Control and performance in international joint ventures. Journal of International Business Studies 20, 235–254.

Geringer, J.M., Herbert, L., 1991. Measuring performance in international joint ventures. Journal of International Business Studies 22, 249–263.

Gomes-Casseres, B., 1996. The Alliance Revolution—the New Shape of Business Rivalry. Harvard University Press, Cambridge, MA.

Greenberg, P.S., 1990. The new global airlines. Europe 297, 31–32.

Hamel, G., Doz, Y., Prahalad, C., 1989. Collaborate with your competitor and win. Harvard Business Review 67, 133–139.

Hamill, T., 1993. 1993 World Airline Directory. Flight International 143 (4361), 39.

Hanlon, J.P., 1999. Global Airlines: Competition in a Transnational Industry, 2nd Edition. Butterworth-Heinemann, London.

Harrigan, K.R., 1985. Strategies for Joint Ventures. Lexington Books, Lexington, MA.

Harrigan, K.R., 1987. Strategic alliances: Their new role in global competition. Columbia Journal of World Business 22 (2), 67–69.

Hutt, M., Stafford, E., Walker, B., Reingen, P., 2000. Case study: defining the social network of a strategic alliance. Sloan Management Review 41, 51–62.

Koza, M., Lewin, A., 2000. Managing partnerships and strategic alliances: raising the odds of success. European Management Journal 18, 146–151.

Noble, C.H., Stafford, E.R., Reger, R.K., 1995. A new direction for strategic alliance research in marketing: organizational cognition. Journal of Strategic Marketing 3, 145–165.

Oster, C.V., Pickerell, D.H., 1986. Marketing alliances and competitive strategy in the airline industry. Logistics and Transportation Review 22 (4), 371–387.

Oum, T.H., Park, J.H., Zhang, A., 2000. Globalisation and Strategic Alliances: the Case of the Airline Industry. Elsevier Science, London.

Park, J.H., 1997. The effects of airline alliances on markets and economic welfare. Transportation Research E 33, 181–194.

Parkhe, A., 1993. Partner nationality and the structure-performance relationship in strategic alliances. Organization Science 4, 301–324.

Porter, M.E., Fuller, M.B., 1986. Coalitions and global strategy. In: Porter, M.E. (Ed.), Competition in Global Industries. Harvard Business School Press, Boston.

Pustay, M., 1992. Towards a global airline industry: prospects and impediments. Logistics and Transportation Review 28, 103–128.

Reed, A., 1994. The tumbling of Alcazar. Air Transport World 31 (1), 33–34.

Reuer, J.J., Miller, K.D., 1997. Agency costs and the performance implications of international joint venture internalization. Strategic Management Journal 18, 425–438.

Sissen, J., 1999. Charting a course. Airfinance Journal (Supplement International Capital Markets). September, p. 2–5.

Stratford, S., 1992. Are strategic alliances working? Fortune, September 21, pp. 77–78.

The Economist, 1995. Airline alliances. Vol. 336 (7924), pp. 59–60.

Thomas, J.B., Trevino, L.K., 1993. Information processing in strategic alliance building: a multiple case approach. Journal of Management Studies 30, 799–814.

UK Civil Aviation Authority, 1994. Airline competition on European long haul routes. CAP 639, Civil Aviation Authority, London.

US General Accounting Office, 1995. International aviation: airline alliances produce benefits, but effect on competition is uncertain. GAO/RCED-95-99, Washington, DC.

Youssef, W., Hansen, M., 1994. Consequences of strategic alliances between international airlines: the case of Swissair and SAS. Transportation Research 28A (5), 415–431.