



# A typology of strategic alliances in the airline industry: Propositions for stability and duration

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**While strategic alliances have become commonplace in the airline industry, the stability and performance of these alliances remains questionable. In this article, the authors review the structure of recent alliances in the airline industry and propose a typology of alliances based on two key dimensions: commitment of resources and complexity of arrangement. Using this typology, the authors derive a series of propositions on the stability and duration of various types of alliances. © 1997 Elsevier Science Ltd. All rights reserved**

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A 1996 survey by Airline Business reported 389 alliances in the global airline industry, a 19% increase over 1995. These alliances range from simple code sharing agreements to equity swaps, management agreements, and joint governance arrangements. According to Airline Business, several trends emerged. First, there has been a decline in alliances involving equity stakes. Only 16% of the current agreements involved equity as compared to 18% of the prior year's alliances. Second, more airlines are becoming involved in the alliance movement. In 1994, there were 136 airlines engaged in some form of alliance. This increased to 153 in 1995 and 171 in 1996. Finally, many airlines are in the process of restructuring their alliance network, dropping some alliances and adding new ones. Iberia who reduced the number of its alliances from 27 last year to 13 was cited as typical of this trend, dropping alliances with a number of smaller carriers and adding larger, more established partners.

The airline industry is not alone in its growing attraction to alliance arrangements. According to Anderson (1990), more alliances have been announced since 1981 than in all of the previous years combined. Since 1985 the annual rate of alliance formation has been over 25% (Pekar and Allio, 1994). Problems of instability, poor performance, and failure are also not limited to the airline industry (Business Week, 1986; Geringer and Herbert, 1991). Doorley (1993) found that 60% of the alliances he examined had a survival rate of only four years. Less than 20% survived for ten years.

Porter (1990) has suggested that alliances are transitional

rather than stable arrangements and rarely result in a sustainable competitive advantage. Hamel (1991) views them as a race to learn in which the winner will eventually establish dominance in the 'partnership'. In their article, Bleeke and Ernst (1995) classify alliances into six types, only one of which they suggest will last longer than the median life span of seven years. The other types are destined to end in dissolution, acquisition or divestiture.

A growing body of research has begun to focus on the role of alliance structure and scope in promoting stable relationships and improved performance (Dussauge and Garrette, 1995; Osborn and Baughn, 1990; Parkhe, 1993). For this paper, we examined the structure, scope, and resource commitment of a number of alliances within the airline industry. Based on this study, we developed a typology of alliances from which we derived a series of propositions on the stability and duration of these alliances.

## Theoretical background

### Definitions

Strategic alliances are a distinct form of entry mode that have been used as a low-cost means of gaining access to new markets and local infrastructure (Doz *et al.*, 1990). They have been defined as 'relatively enduring interfirm cooperative arrangements, involving flows and linkages that utilize resources and/or governance structures from autonomous organizations, for the joint accomplishment of individual goals' (Parkhe, 1991: 581). We have excluded mergers and acquisitions from consideration since there would technically no longer be two 'autonomous organizations'. This was not a major problem in the airline industry

for two reasons. First, the industry is highly concentrated already and mergers and acquisitions are relatively rare events. Second, most national governments place severe restrictions on such activity.

In the joint venture literature, instability has been defined in terms of changing control (equity), termination, and duration (Franko, 1971; Killing, 1983; Kogut, 1989). From our perspective, a stable relationship is one in which there are no major changes in the relationship. This would include changes designed to increase or decrease the linkages between firms, however, it would not necessarily include the termination of the relationship. As Inkpen and Beamish (1997) point out, a stable venture may terminate when the strategic needs of one or both partners change. A termination that is 'unplanned and premature from the perspective of either one or both partners' (182), such as the British Airways/USAir alliance, would be considered an indication of instability.

*Dimensions of an alliance*

Bleeke and Ernst (1995) based their typology of alliances on the market strength of partners, their motivation, and the outcome of the relationship. To this extent, it is a post-facto typology since alliances can not be ultimately classified until the outcome of the relationship is known. For example, an alliance between a weak firm and a strong firm can result in either a Type III alliance in which the weaker partner fails to gain strength and is acquired or divested or a Type IV alliance in which the weak partner increases its strength to become an equal and dissolves the partnership since it can now survive on its own. Our goal was to identify several characteristics or qualities that could be used to predict the stability and duration of alliance arrangements.

A review of the reported alliance arrangements to date revealed two key dimensions on which they differed: commitment of resources and complexity of arrangement. Figure 1 reports the classification of different alliance types by these two dimensions.

*Type I—Codesharing.* This was defined as a commercial agreement between two airlines under which an airline operating a service allows another airline to offer that service to the traveling public under its own flight designator, even though it does not operate the service (Burton and Hanlon, 1995). These agreements are point specific and must be arranged for each city the airline wishes to serve. Beyhoff (1995) distinguishes between five types of codesharing: free sale, wet lease, franchise, blocked space, and joint venture. Differences are related to which carrier is responsible for the risk involved and the predetermined allocation of seats. We have included only the free sale type of codeshare in this category. An example of this type of alliance is the Iberia-Air Canada codeshare on the Madrid-Montreal-Toronto route. The benefit to this type of relationship is the ability to be route specific as well as offering 'seamless' service to passengers. According to Humphreys (1994) the main reason airlines historically

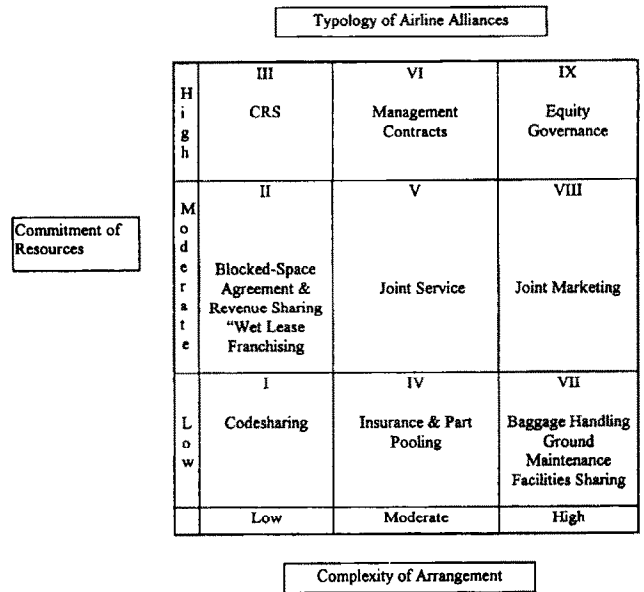


Figure 1

entered codeshare arrangements was to benefit in terms of CRS display since CRSs tend to place multiple displays on the first screen from which 70 to 90% of all flights are booked (Hadrovic, 1990).

This type of alliance (free sale code share) is characterized by a low level of required resources and a low level of commitment. Therefore, a codeshare agreement needs less attention from either partner than other types of alliances. There are no real resources needed here for either partner because, once programmed, the computer reservation system or CRS (ex. Sabre, Apollo, etc.) will automatically show the flight with the carriers two letter code anytime it is asked. Due to the low level of commitment and complexity, codeshare agreements are the most widely entered into alliances and account for over 70% of all the alliances in the industry today (Whitaker, 1996).

*Type II—Blocked space agreements, revenue sharing, 'wet' lease, and franchising.* A blocked space agreement exists when one airline allocates to another a number of seats on some of its flights: a kind of partial 'wet lease' (ex. Finnair-Air China block space on the Helsinki-Beijing route). The other airline then sells these seats to the traveling public through its own marketing and distribution system (Burton and Hanlon, 1995). The responsibility for selling these seats fall on the 'leasing' airline, as well as the losses incurred in the event that the seats are not sold.

In this case, there is a medium level of resource commitment because the airline must provide the seats to the 'leasing' airline. This, in effect, means that the airline providing the seats has a better chance of meeting or exceeding break-even load factors due to the fact that those seats 'blocked out' to the leasing airline will be paid for whether they are full or not. The 'leasing' airline also has only a medium level of resource commitment because it only requires the use of the CRS to display the available seats

on the flight. It is important to acknowledge that the 'leasing' airline has a greater risk in this case because it will be the one to lose revenue if it does not sell the available seats. The complexity of the arrangement is low because there is not a great deal of coordination that must take place.

Revenue sharing occurs when both airlines experience revenues that they would not otherwise experience without the arrangement. In other words, the ability of an airline to fill more seats through a joint venture codeshare, a blocked space agreement or a joint marketing agreement brings in more revenue for the airline and, in turn, the airline benefiting from the higher revenue will pass a portion of that revenue onto the other carrier (Beyhoff, 1995; Burton and Hanlon, 1995). The Air France-Air Seychelles revenue agreement on the Paris/CDG-Mahe service is one such example. A 'wet' lease occurs when one carrier rents the aircraft and staff of another (ex. Balair/CTA-Swissair to Palma de Mallorca). In a franchising arrangement the operating airline 'rents' the brand name of another airline but supplies its own staff and aircraft (Beyhoff, 1995).

These alliance types were placed under a Type II classification because the amount of interaction which takes place is generally low once the agreement has been reached. At the same time, it requires a moderate level of resources, i.e. the use of CRS, the surrendering of a block of seats from one partner to another, aircraft rental, etc.

*Type III—Computer reservation systems (CRS).* This arrangement is one in which airlines share and/or adopt a partners' CRS (ex. British Airways-Quantas). There are three major US computer reservation systems, Sabre, System One, and Apollo. For many airlines, it is easier to use another airline's system than to support its own. An airline could even go so far as to purchase a certain share of the reservation system from another airline.

The commitment of resources is high for this type of alliance. This is true because one airline must purchase/lease the system from another. Conversion to and training in the new system must take place. The airline providing the system may also include maintenance support. The interaction between partners is still low at this point. Even though such things as maintenance support and training may be required, the level of interaction once the system is working is not substantial.

*Type IV—Insurance and parts pooling.* This type of alliance involves the joint purchase of parts or insurance by two airlines (ex. Aviateca-Taca). Such an alliance would occur to spread out the high cost of insurance or to allow for a greater availability of parts. This type of alliance may be beneficial to those airlines which share facilities (i.e. hangers, etc), have similar route structures, or have small fleets.

This alliance consists of a low level of resource commitment. This is true for two reasons. First, both airlines in the alliance would have to buy insurance and parts in any event. Second, this agreement actually provides lower

expenditures due to the sharing of expenses. The level of complexity is moderated due to the amount of interaction which might normally take place. Areas of coordination would include coordinating policies and coverages and coordinating part ordering for different maintenance facilities. The amount of interaction, although not high, may present a certain amount of difficulty.

*Type V—Joint service.* Airlines entering into joint service partnerships have complementary route structures and are able to blend their flights. The partners are striving to provide 'seamless' service to as many destinations as possible. This type of alliance is beneficial for airlines which have similar fleets as well as similar or complementary routes. Joint service provides airlines the ability to cut costs through the reduction of 'ground hours' (Gallacher, 1994). This type of alliance may also offer flexibility to both partners. Some examples of this type of alliance include Egyptair-Philippine Airline service from Manila to Cairo and Garuda-Malaysia Airlines joint service on the Kuala Lumpur-Denpasar route.

Both the commitment of resources and the complexity of the arrangement are moderate. In a joint service agreement, there is a significant amount of coordination of flights as well as the use of at least one partners aircraft.

*Type VI—Management contract.* Airlines participating in this type of alliance decide that their partnership would be better served if one group of trained individuals were responsible for a portion of the alliance. This group can be made up of managers from both airlines or can be a group from only one airline. Often this type of alliance is entered into to ensure a constant level of service or to provide consistency in decision making. Examples of this type of alliance include Iberia-Aerolineas Argentinas and Gambia Airways-Air Afrique.

The level of resource commitment is high in this case due to the fact that either one or both partners will be providing valuable employees to the alliance. The level of interaction is moderate due in large part to the hands off approach of top level management. The management group that will be working in conjunction with each airline has a high level of interaction in daily operations.

*Type VII—Baggage handling, ground maintenance, and facility sharing.* This type of alliance is for airlines with similar routes who have the ability to work together in providing baggage handling and ground maintenance so that the operations of both airlines can run smoothly (ex. Japan Airlines-All Nippon Airways and Aviateca-Taca). The baggage handling agreement would be beneficial for any airline which has passengers transferring from one airline to another, especially overseas. Ground maintenance contracts can save an airline a great deal of time by having parts and maintenance personnel available at non-hub maintenance facilities. Finally, facility sharing can cut cost and provide each airline with needed gate availability or hanger space.

*Type VIII—Joint marketing.* In this type of alliance, airlines are usually looking to market their joint service. Airlines spend a great deal of money in marketing and promotion of themselves, emphasizing in particular the size of their networks and their connections with the networks of their partners (Burton and Hanlon, 1995). An example of this type is the British Airways-Deutsche BA marketing and sales agreement.

The classification for this type is a moderate level of resource commitment and a high level of interaction. The moderate level of resource commitment is due to the capital that must be placed into the marketing campaign. There is a high level of interaction due to the cooperation that must go into the preparation of the marketing program and the trust required between competitors in an industry where marketing is often seen as a key competitive advantage.

*Type IX—Equity/governance.* Equity sharing or swapping is also used in airline alliances. The exchange of a certain percentage of equity or the purchase of shares by one partner accounted for 16% of the alliance agreements in the third annual alliance survey by Airline Business (June 1996). These alliances also frequently involve the participation of one or both airlines in the board governance structure of their partner airline (ex. KLM-Northwest).

This type of alliance has both high resource commitment and complexity. The purchase or exchange of shares represents substantial financial commitment while the level of interaction in shared governance situation requires interaction at the highest, strategic levels of the airline.

#### *Stability and duration of alliances*

Resource commitment and complexity have been the subject of extensive research and debate in a number of fields including entry mode strategy, organizational structure and design, and strategic intent. Resource commitment involves dedicating assets to a particular use in such a way that their redeployment to other uses would result in some level of cost to the firm. It not only limits strategic flexibility and serves as a barrier to exit but may result in sunk, unrecoverable costs to the firm (Harrigan, 1980). According to Parkhe (1993), the willingness to commit resources to an alliance lessens the perception of opportunistic behavior on the part of partners. A high degree of nonrecoverable, alliance-specific investment has been shown to create more stable, higher performing alliances (Freeman, 1987; Heide and Johns, 1988; Smith and Aldrich, 1991). Based in this line of reasoning, we would suggest that:

*Proposition 1: The stability of an alliance will increase with the level of resource commitment. The most stable alliances will involve high levels of commitment by all parties in the alliance.*

*Proposition 2: The duration of the alliance will be positively related to the level of resource commitment.*

Researchers have linked resource commitment (money, personnel, and time) to firm control, involvement in opera-

tions, and responsibility for decision making (Anderson and Gatignon, 1986; Root, 1987). Yet, the more complex the relationship the greater the 'fundamental problem of cooperation' (Ouchi, 1980: 130). Alliances that involve greater coordination and integration of resources require a level of trust and interaction that is generally foreign to competitive firms. Kogut (1989) found that joint ventures were more unstable in highly concentrated industries, particularly when the functional scope included marketing and after-sales services. His finding is likely related to the 'competitive' nature of marketing-related issues. The need for higher levels of coordination and integration is also likely to increase problems relating to incompatible systems, procedures, training, and organizational cultures. For these reasons, we suggest that:

*Proposition 3: As the complexity of the alliance increases, so will the likelihood that it will experience instability.*

*Proposition 4: The duration of the alliance will be negatively related to the complexity of the alliance.*

As our analysis of the current variation in alliance types (Figure 1) reveals, these two dimensions do not necessarily vary in tandem. It is possible to have an alliance that involves significant commitment of resources but low levels of complexity and visa versa. The difficulty in attempting to predict which type of alliance will be most stable or durable stems from the fact that the pressures applied by these two dimensions are conflicting: increasing resource commitment is expected to increase stability while increasing complexity decreases it. However, we would suggest that taken as a whole a pattern does emerge for both stability and duration.

A Type I alliance is characterized by low levels of both resource commitment and complexity. Such an arrangement is likely to have a very specific, limited scope and purpose. While this type of alliance may be terminated when the strategic focus of one or both parties changes, the fact that it requires relatively little attention and resources would seem to make it a potentially stable arrangement. It should be noted that the 'opening' of international markets may change this assessment by allowing easier direct access to other markets. In the meantime, such an alliance is still expected to be relatively stable and may endure long after its strategic purpose has ceased to apply simply due to organizational inertia or inattention.

*Proposition 5: A Type I alliance will exhibit a high level of stability due to the limited nature of the arrangement.*

On the other hand, a Type IX alliance consumes a high level of resources and requires the partners to engage in complex interactions such as joint governance. Partners in such an alliance would be expected to experience more problems related to integrating systems, cultures, managerial and competitive philosophies. However, the high level of resource commitment should increase the incentive of both partners to 'make the alliance work'.

*Proposition 6: A Type IX alliance will exhibit high levels of instability as partners seek to achieve a workable relationship.*

A Type III alliance involves a high level of resource commitment on the part of at least one party to an alliance arrangement that does not involve a great deal of interaction between the firms. This lack of interaction would tend to lessen the problems associated with incompatible systems, cultures, etc. In this case, the overriding issue may be the sizable cost of terminating the relationship. Therefore, we suggest that:

*Proposition 7: Type III alliances will be the most durable type of alliance due to the high level of resource commitment and low level of complexity (interaction).*

Finally, a Type VII alliance requires a high level of interaction between partners that is likely to reveal differences in training, supervisory approach, culture, etc. The fact that this type of arrangement does not involve high levels of resource commitment would make the decision to end the relationship less costly. Thus,

*Proposition 8: A Type VII alliance is most likely to experience failure due to the high level of complexity (interaction) and low level of resource commitment.*

## Conclusion

The term 'strategic alliance' has been applied to a wide variety of interfirm cooperative ventures. Within the airline industry the term has been used to describe everything from a simple single route codesharing to the elaborate agreement proposed between British Air and American. Many of these alliances include multiple alliance types such as the British Airways-Quantas alliance which entails joint Frequent Flyer Programs and airport lounges, reciprocal ground handling, minor maintenance agreements, joint purchases, and adoption by Quantas of the BA BABS CRS. Given this level of diversity, it should not be surprising that researchers and managers alike differ in their assessment of the stability, duration, and performance of strategic alliances. In this paper we have suggested that alliances vary in relationship to two dimensions, commitment of resources and complexity of arrangement. In general, the higher the commitment of resources to the alliance the greater the stability and the duration of the relationship. The more complex the arrangement the less stable and the more likely the alliance is to end in failure. Taken together, these two characteristics result in contradictory pressures on the alliance.

We have argued that the most stable type of alliance is one in which there is low resource commitment and complexity because such a relationship usually has a very narrow, specific purpose and does not consume valuable resources in an effort to integrate interfirm activities or cultures. The most durable alliance will involve high levels of resource commitment to a relatively simple activity or arrangement. In this case, cost is the most significant pressure on the alliance. Those types of alliances most likely to fail are characterized by low levels of resource commitment, particularly nonrecoverable resources, to activities involving a high degree of complexity, interaction, and integra-

tion. Finally, alliances subject to the dual pressures of high cost and high interaction are more likely to experience instability. Obviously, once airlines begin to engage in multiple types of strategic arrangements the level of complexity, interaction, and usually, resource commitment goes up resulting in increasing instability.

From our perspective, instability in and of itself is not necessarily a 'bad thing.' It can be an indication that the parties in the alliance are committed to establishing a successful partnership. Alliances have often been referred to as marriages. As such, we would expect to see periods of conflict, change, and readjustment as the partners learn and grow in their own right and in their knowledge of each other. It is possible that stability in complex relationships is the exception rather than the norm and that expecting stability only sets the relationship up for failure.

Further efforts should be undertaken to understand the elements that contribute to 'successful' alliances in order to help firms achieve the theoretical benefits of this type of market entry. It is hoped that this paper will provide a fruitful basis for some of this effort.

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