Rim and Latin America. In 1983, the Atlantic accounted for 48% of our carriers' international revenues, while the Pacific accounted for 32%. By 1993, the Pacific had grown to 46% while the Atlantic was only 37%. The fastest growing sectors of the international aviation market are new and relatively undeveloped markets. During this same period, revenues in the Pacific grew 286%, in Latin America 151% and in Europe 116%. Second, from 1983 to 1993, the number of international aviation city-pair markets in which U.S. airlines participate has grown by more than a third, reflecting the major expansion of air service and carrier networks throughout the world and the increased dispersion of demand. Many of these city-pair markets are relatively small, generating only a few passengers per day.

Towards a Globalized Aviation Industry

The rapid growth of demand for international air service and the wider dispersion of traffic in city-pair markets are primary factors influencing the development of the air service industry. Carriers are increasingly finding that they cannot remain profitable unless they can respond to this changed demand. To compete effectively, carriers today must have unrestricted access to as many markets and passengers as possible.

To meet demand and to improve their efficiency, many carriers are developing international hub-and-spoke systems that permit them to combine traffic flows from many routes (the "spokes") at a central point (the "hub") and transport them to another point either directly or through a hub in another region. Just as U.S. carriers developed hub-and-spoke systems to tap the broad traffic pool in the domestic market and to provide the most cost-efficient service for hundreds of communities that could not support direct service, international air carriers are developing world-wide hub-and-spoke systems to tap the substantial pool of international citypairs. Internationally, an even larger portion of traffic moving over hub-andspoke systems will require the use of at least two hubs (e.g., a hub in both the U.S. and Europe for a passenger moving from an interior U.S. point to a point beyond the European hub). This increases the complexity and interdependence of the components of the system (both the spokes and hubs) and the importance of multinational traffic rights to the success of the system.

As a result, carriers wishing to establish global networks require a

higher quality and quantity of supporting route authority than they have sought in the past. Airlines will become increasingly concerned with every market that enables them to flow passengers over any part of their system network. These airlines will be looking for broad, flexible authority to operate beyond and behind hub points, in addition to the hub-to-hub market between two countries. At present, governments operating in a bilateral context naturally focus on opportunities for their respective carriers to serve the local market between their two countries. In a bilateral context, services destined for or coming from third countries receive less consideration. In the future, governments will have to adjust their focus to bargain for the bundles of rights that will permit airlines to develop global networks.

Carriers can either serve markets themselves (direct service) or provide service through commercial arrangements with other carriers (indirect service), whether on a traditional interline connecting basis or under a closer commercial agreement between the carriers, such as code sharing. Carriers will develop service products—single-plane, on-line connecting, interline connecting, joint service—that respond to the preferences of the traveling public as measured by passenger willingness to pay for differences in the quality of service and that take into account their cost structure and market strategy. To the greatest extent possible, airlines should be free to set prices and offer various service products in response to passenger preferences.

Significant challenges face carriers wishing to develop international networks using their own direct services. They need:

- Substantial access not only to key hub cities overseas, but also through and beyond them to numerous other cities, mostly in third countries. This type of access is not readily obtainable in today's bilateral system of negotiating air rights, since governments can only exchange access rights to their own countries and cannot, between themselves, deliver access to third countries, thus requiring piecemeal negotiating efforts to build the necessary package of rights;
- Access to a large number of gates and takeoff/landing slots, frequently at some of the world's most congested airports. It may become increasingly difficult for carriers to gain effective, direct access to certain airport facilities, including some in the United States;

- Considerable financial resources to establish and sustain commercially successful overseas hub systems; and
- The ability to obtain infrastructure and establish market presence in a new region quickly. Existing foreign investment laws can effectively preclude airlines from entering new markets in one of the most efficient means available: merger or acquisition.

Some carriers are taking on these challenges directly and are striving to develop their own global systems of direct service. Other carriers have chosen to side-step the obstacles, turning instead to a new networkbuilding technique: Cross-border marketing alliances that link traffic flows between established hub-andspoke systems in key cities of the Western Hemisphere, Europe and Asia. Some of these alliances involve cross ownership, while others do not. Under this strategy, the linking of hubs requires indirect market access through code-sharing or other cooperative marketing arrangements. Although code sharing has become a widely-used marketing device for airlines and is currently the most prevalent form of commercial arrangement, further evolution of the industry and its regulatory environment may lead to new marketing practices that could supplement or supplant code sharing.

Code sharing and other cooperative marketing arrangements can provide a cost-efficient way for carriers to enter new markets, expand their systems and obtain additional flow traffic to support their other operations by using existing facilities and scheduled operations. Because these cooperative arrangements can give the airline partners new or additional access to more markets, the partners will gain traffic, some stimulated by the new service, and some diverted from incumbents. In this way, cooperative arrangements can enhance the competitive positions of both partners in such a relationship

Increased international code sharing and other cooperative arrangements can benefit consumers by increasing international service options and enhancing competition between carriers, particularly for traffic to or from cities behind major gateways. By stimulating traffic, the increased competition and service options should expand the overall international market and increase overall opportunities for the aviation industry. U.S. airlines should be major beneficiaries of this expansion and the concomitant increased service opportunities, given their competitive advantages.

Moreover, code sharing should also enhance domestic competition. Many