

9-1-2002

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Recommended Citation

Rhoades, Dawna L. (2002). Liberalization of international air transportation markets: the effect of terrorism on market trends. *Journal of Transportation Management*, 13(2), 45-58. doi: 10.22237/jotm/1030838700

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LIBERALIZATION OF INTERNATIONAL AIR TRANSPORTATION MARKETS: THE EFFECT OF TERRORISM ON MARKET TRENDS

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ABSTRACT

Since the United States deregulated its airline industry with the Airline Deregulation Act of 1978, the international air transport industry has been on a path toward market liberalization. Market changes have included entry, capacity, and pricing freedom as well as increased levels of foreign ownership. The recent terrorist acts of September 11, 2001 have the potential to alter, if not reverse this course. This paper examines the forces fueling the trend toward liberalization and analyzes the impact of recent events on the future prospects of open aviation markets.

INTRODUCTION

According to the *World Investment Report 2001* published by the United Nations Conference on Trade and Development, global foreign direct investment rose to a record US\$1.3 trillion dollars in 2000. Contributing to this increase was the number of cross border mergers and acquisitions, which were up nearly 50 percent to US\$1.1 trillion (UNCTAD, 2001). In addition to the growth in FDI, world merchandise and service exports have continued to post significant gains. World Trade Organization figures indicate that merchandise exports rose to US\$5.47 trillion dollars in 1999 while service exports rose to US\$1.35 trillion for the same period. Travel services accounted for \$440

billion of these dollars (World Trade Organization, 2001). The latest estimates from the International Air Transport Association are that the total economic output of the air transport industry is over US\$1.3 trillion. In the United States alone, the airline industry contributed nearly \$273 billion dollars to the total economy, including \$109.1 billion in direct expenditures (salaries, purchase of equipment, etc), \$109.1 billion in indirect benefits (airports revenue, travel agency), and \$54.6 billion in visitor spending and conference revenues (Air Transport Association, 2000).

While the international air transport industry has played a significant role in globalization of economic activity, the industry itself has

remained firmly rooted in the domestic market. Governments around the world have treated airlines like a public utility whose service is said to be in the public interest. The public interest argument is based on three areas: national security and use in national defense under programs like the U.S. Civil Reserve Air Fleet program, postal air delivery, and contribution to commercial activity (Kane, 1999). International airlines also "carry the flag" and represent the national achievement and pride of their home country. This latter role is not to be underestimated. When the bankruptcy and subsequent grounding of the Swissair fleet forced the Swiss football team to fly Aeroflot to a qualifying match in Moscow, one article reported this as a "further humiliation for the Swiss flag carrier" (Hall, Grant, Done, Cameron, and Dombey, 2001).

Because of the special status accorded to air transport, governments have always taken an interest in promoting and protecting their national carriers. Directly or indirectly governments played an important role in shaping their national aviation systems. A tightly regulated international aviation market whose basic precepts were laid out even before the end of World War II insured protecting the national industry and its carrier(s). In recent years that regulatory regime has come under increasing pressure to liberalize. The terrorist attacks of September 11, 2001 have called this trend into question as governments worldwide now struggle with issues of security. Many of these governments are also faced with an aviation system on the verge of collapse.

The purpose of this paper is fourfold. First, the regulatory development of the air transportation system will be reviewed, including the rationales for treating air transport as a special case in international business. Second, the forces leading to liberalization of this market will be examined. Third, the progress in air liberalization will be discussed prior to the recent terrorist attacks. Finally, the impact of these attacks on the transportation industry and liberalization will be assessed.

REGULATORY DEVELOPMENT

The development of a regulatory regime for the international air transport industry can be divided into four phases. Phase I witnessed the birth of the industry and a philosophical struggle between freedom and tight regulation. Phase II began with the reluctant acceptance of a system of relatively tight regulation. Phase III saw deregulation of the U.S. air transport industry and renewed efforts for a more liberal international air transport regime. Phase IV may mark its beginning on September 11, 2001 with the attacks on the World Trade Center and Pentagon.

Phase I, 1910-1943

Seven years after the first heavier-than-air, manned flight of the Wright Brothers at Kitty Hawk, the first international conference on air navigation was convened in Paris in 1910. The key debate was over the rights and privileges of flying. One view sought to apply the "Freedom of the Seas" model to the entire airspace and was championed by the French and German delegations. The other view argued for the sovereignty of nations over the airspace above their terrestrial borders with rights to control entry and in airspace activities. The British were the key proponents of the national sovereignty faction. While the Paris Conference did succeed in identifying the key concepts, terms, and technical provisions of international aviation, it failed to resolve the freedom/sovereignty debate. In the absence of international agreement, the British moved to pass the British Aerial Navigation Act in 1911 (amended in 1913). This act declared British rights to its sovereign airspace and gave the Home Secretary full power to regulate the entry of foreign aircraft. The other European governments followed the British example prior to the beginning of World War I.

World War I clearly demonstrated the potential of aviation in the military arena as an offensive and defensive weapon. The ability of aircraft to

support the transportation of troops and equipment would not be fully realized until World War II, but the supporting role of aviation was not ignored following World War I. An aeronautical commission formed as part of the Peace Conference ending World War I decided to prohibit the development of military aviation in Germany but to allow civil aviation to continue. The Commission also drafted the Paris Convention of 1919 whose first article proclaimed the right of each state to "complete and exclusive sovereignty over the airspace above its territory." The Paris Convention would remain in effect until superceded by the Chicago Convention (Sochor, 1991).

The period between the two world wars saw two different models of government intervention in the development of the domestic air transportation system. Direct intervention became the most frequent method of promoting domestic aviation. Governments either provided direct subsidies and/or assumed full or partial ownership of air transport companies. British Airways and Air France are two classic examples of this strategy. The British Overseas Airways Corporation (BOAC) was created in 1939 when two smaller British carriers were merged and nationalized. Air France emerged in 1933 from the merger and nationalization of Air Orient, Air Union, CIDNA and SGTA (Hengi, 2000). This direct intervention did not suit the philosophical and political tastes of U.S. lawmakers and officials. Indirectly, the U.S. government strongly influenced domestic air transportation through the U.S. Post Office Department that was authorized by the Air Mail Act of 1925, also called the Kelly Act, to enter into contracts with private persons or companies to transport mail by air. The Air Mail Act was amended in 1930 to give the postmaster the authority to consolidate routes in the public interest. Postmaster Walter F. Brown used his authority to redraw the air map of the U.S. and award air mail contracts to a small group of airlines that he considered well run and financially stable. In fact, Brown had told the carriers that the air mail routes would be consolidated and awards granted only to carriers with sufficient size to serve the route.

This "forced" major consolidation in the industry in an effort to obtain these very lucrative contracts, which could provide the stable income that passenger service did not offer.

Many routes started offering passenger service to provide "additional income" to their air mail business (Davies, 1984). A scandal fueled by smaller carriers who were excluded from these contracts temporarily halted all airmail awards. The Air Mail Act of 1934 changed the system of awarding contract and barred all prior contract holders from bidding on new awards. However, the new post-master general, Farley, privately advised these airlines to reorganize and reapply. Thus, the airlines known as American Airlines, Eastern Airlines, and United Airlines were formed. In fact, almost all of the major U.S. carriers except Southwest, America West, and Alaska Airlines can trace their origin to early air mail carriers. The increasing importance of air mail added a further argument to the "public interest" status of air transportation (Wells, 1994). By 1998, the ten major U.S. airlines were responsible for carrying over 251,279 tons of mail (Aviation Week, 2000).

Phase II, 1944-1978

While World War I hinted at the importance of air transportation to the security of nations, World War II with the Battle of Britain and massive bombing campaigns clearly demonstrated it's potential. The technological advances made during and just prior to the war also showed that the industry could contribute economically as an engine for innovation. Even as U.S. President Franklin D. Roosevelt and British Prime Minister Winston Churchill were meeting in Quebec to plan the cross-channel invasion, the topic of a general meeting to discuss the future of air transportation came up as an issue. The conference was convened in Chicago on November 1, 1944. Representatives of all but one of the allied World War II nations attended it. The delegates were presented with four proposals for an international aviation system. The joint proposal of Australia and New Zealand called for international ownership and manage-

ment of all international air service. The United States proposal sought a system with unrestricted air service rights and market-based control of frequency and fare issues. The British wanted an international regulatory body to distribute air routes and determine frequency and fares. The Canadians offered a compromise proposal that would have allowed limited competition in a system controlled by a multilateral oversight body. No agreement could be reached on the main issues. Neither the U.S. nor Great Britain was willing to compromise their positions or jeopardize efforts to conclude the war. Great Britain also had one final card to play—landing rights. They suggested the possibility of developing an all-Commonwealth airline with exclusive landing rights in Commonwealth and British territories. Since the parties had no reason to assume that the British Empire would change following the war, this appeared to be a credible threat (Sochor, 1991).

Without agreement on anything but the basic freedoms at the conclusion of the Chicago Convention, national governments were forced to fall back on the traditional means of resolving territorial disputes—treaty. In 1946, two key wartime allies and aviation leaders, the United States and the United Kingdom, met to negotiate and sign the first bilateral air service agreement. The Bermuda Agreement as it is now known became the model for all future bilateral air service agreements. The Agreement granted each party the five freedoms of the air (Table 1 lists these five and the four additional freedoms added later.) on named routes for multiple carriers without specifying capacity or frequency limitations. The U.S. also agreed in principle to the establishment of an international body, the International Air Transport Association (IATA), to set fares. Subsequent bilaterals not including the U.S. also included frequency and capacity limitations that attempted to split air traffic between designated carriers of the two countries

TABLE 1
THE FREEDOMS OF THE AIR

Freedom	Description
First	The right to fly over the territory of a contracting state without landing
Second	The right to land on the territory of the contracting state for non-commercial purposes
Third	The right to transport passengers, cargo, and mail for the state of registration to the aircraft to another state and set them down there
Fourth	The right to take on board passengers, cargo, and mail between two other states in another contracting state and to transport them to the state of registration of the aircraft
Fifth	The right to transport passengers, cargo, and mail between two other states as a continuation of, or as a preliminary to, the operation of the third or fourth freedoms
Sixth	The right to take on board passengers, cargo, and mail in one state and to transport them to a third state after a stopover in the aircraft's state of registration and vice versa
Seventh	The right to transport passengers, cargo, and mail between two other states on a service that does not touch the aircraft's country of registration
Eighth	The right to transport passengers, cargo, and mail within the territory of a state that is not the aircraft's country of registration (full cabotage)
Ninth	The right to interrupt a service

involved. A pooling agreement was often included to insure that revenue was evenly divided between country carriers (Toh, 1998).

Bermuda I was a compromise that clearly favored the U.S., as did most of the other agreements signed shortly after the war. Unlike the nations of Europe, the U.S. had both a number of air carriers and an intact aviation system. It also had money that many countries sought to help them rebuild following the war. As a result, the U.S. carriers were granted greater capacity and frequency freedom as well as more extensive beyond or fifth freedom rights. By 1976, the British felt confident enough to give notice of their decision to terminate Bermuda I. The Bermuda II agreement, signed in 1977 eliminated multiple carrier designations, limited capacity, and restricted American fifth freedom rights. The U.S. viewed this as a major setback in the liberalization of international air transport (Toh, 1998).

Phase III, 1979-2000

To demonstrate its commitment to air transport liberalization, the United States initiated three actions in 1978. In early 1978, the U.S. issued a statement entitled "Policy for the Conduct of International Air Transportation." This statement reaffirmed the U.S. commitment to liberalization. Shortly afterwards, the Civil Aeronautics Board (CAB) issued an order to IATA to "show cause" why they should not be considered an illegal cartel as prohibited by U.S. anti-trust law. Since IATA membership was restricted to international airlines whose major tasks included setting fares and capacity, there was little argument of violation. Finally, in late 1978, the United States became the first government in the world to deregulate its air transport industry with the passage of the Airline Deregulation Act. This Act would phase out the CAB with its market control over entry/exit, pricing, and service levels and house the remaining safety functions of the federal government with the Federal Aviation Administration (FAA).

The International Air Transportation Competition Act (IATCA) of 1979 laid out the competitive goals of future U.S. policy as encouraging 1) multiple carrier designation without operational restrictions, 2) market-based determination of air fares, and 3) elimination of unfair and discriminatory competitive practices such as excessive user fees, exclusive airport services, and limited access to facilities. These features are incorporated in the U.S. policy of open skies (see Toh, 1998 for further discussion). The U.S. pursued two paths toward fostering open skies. The Director of the Bureau of Pricing and Domestic Aviation at the CAB laid out the first path. The so-called Encirclement Strategy called for the U.S. to bring pressure on smaller market countries to sign open skies agreement as a means of diverting traffic from larger aviation markets. This strategy was based on the assumption that open skies would lower fares between those countries involved and cause passengers to change their traveling patterns in pursuit of lower fares. The pressure of falling traffic would then encourage larger market countries such as the United Kingdom and Japan to accept the more liberalized open skies agreement (Levine, 1979). The U.S. first sought open skies with smaller market countries. These countries generated very little third and fourth freedom traffic (to and from the U.S.), but stood to gain by getting greater access to U.S. destinations. There could also be no question of exchanging domestic opportunities since these small nations had little domestic traffic to exchange (Antoniou, 2001). There is evidence to support the economic benefits of open skies. In the case of the U.S.-Canadian agreement, results in the year immediately following the implementation of the agreement saw an increase in traffic of over one million passengers as well as growth in the number of cities served (Office of International Aviation, 1996; Pustay, 1997).

The second path to open skies came through the application of the U.S. Department of Transportation's (DOT) policy on approving airlines alliances. This policy based approval on

either the coverage of the rights under existing bilateral or proven benefits to the U.S. (Gellman Research Associates, 1994). In addition, the U.S. DOT has granted immunity from antitrust to alliances between carriers from open skies countries. Antitrust immunity allows competitors to coordinate on issues of pricing, capacity, and scheduling. This has allowed those alliances with immunity to achieve greater levels of operational integration, thus cutting costs and improving quality through coordination (Oum and Park, 1997). The "carrot and stick" approach toward achieving open skies has results in some 50 open skies agreements (Table 2).

Other countries were also pursuing a more liberal approach to aviation. Unlike the U.S. domestic deregulation, the Europeans opted for a more gradual approach to aviation deregulation. The first and second packages (1987 and 1990 respectively) liberalized air transport among members of the European Community by creating additional route and carriers designation as well as lifting capacity limitations. The third package, which became effective in 1993, phased in further liberalization ending in April 1997 with the creation of a single aviation market in the European Union (Morrell, 1998). Under this single market, carriers established in any of the EU countries are granted all of the so-called freedoms of the air. With this step, the Europeans have taken the lead in air transport liberalization. In fact, the position of the European Commission, Directorate General for Transport on open skies is that "[o]pen skies is an American term which, as we see it, is synonymous with a free for all system depending on the good behavior of air carriers and only a partial opening of the market" (Sorenson, 1998, p. 125). The current European view is that ownership and domestic markets should be opened. These concepts are embodied in a proposal put forth by the Association of European Airlines (AEA) called the Transatlantic Common Aviation Area (TCAA). While the AEA suggests that TCAA should include liberalization of airline ownership and right of establishment as well as harmoni-

zation of competition and leasing policies, the basic objective "must be to ensure that all airlines of the parties to the TCAA will have unrestricted commercial opportunities to conduct the business of air transport anywhere within the TCAA." (Association of European Airlines, 2001). Acceptance of this agreement would essentially create a single aviation market across the North Atlantic.

Other areas associated with air transport have also been undergoing liberalization including the privatization of airports, air traffic control systems, and airport related services such as security and the removal of restrictive policies that favored domestic over foreign carriers. The privatization of airports began in 1987 when Great Britain sold seven of its airports to the British Airport Authority (BAA). Since this time, airports in Australia, Germany, Italy, Argentina and a dozen other countries have shifted from public to private hands (Pope, 1996; Utt, 1999). Air traffic control systems have been or are being privatized in such countries as Canada, Switzerland, South Africa, and Germany in the belief that private firms would not only be able to raise capital more quickly but would have a greater incentive to modernize ATC systems, decreasing delays and improving safety (McCartney, 2001).

In short, the aviation industry in general underwent a major reorientation during the third phase of its existence. Liberalization increasingly won out over efforts to maintain the tightly restricted markets of the past. These efforts have made air travel more affordable for passengers and airfreight more viable for international shippers. Liberalization has placed a burden on those few remaining government-owned and run international airlines. It has also threatened the small, nation market airlines such as the Belgian airline Sabena. In fact, liberalization has been a particular burden on small, developing nations that have neither the resources to compete effectively with the larger international carriers nor the markets to attract foreign interest and investment (Abeyratne, 1998). Nevertheless, as economies grew the level

TABLE 2
OPEN SKIES AGREEMENTS

Year	Date	Country	Year	Date	Country
2000	11/28	Benin	1995	6/14	Austria
	7/27	Burkino Faso		9/5	Belgium
	5/2	Gambia		6/16	Denmark
	3/16	Ghana		6/9	Finland
	10/12	Malta		6/14	Iceland
	10/11	Morocco		6/6	Luxembourg
	3/16	Namibia		6/16	Norway
	8/26	Nigeria		6/16	Sweden
	6/30	Portugal		6/15	Switzerland
	10/11	Rwanda			
	12/15	Senegal			
	1/8	Slovak Rep.			
	8/28	Tanzania			
	5/2	Turkey			
1999	12/6	Argentina	1992	10/14	The Netherlands
	5/24	Bahrain			
	10/21	Chile			
	12/16	Dominican Republic			
	12/6	Italy			
	11/10	Jordan			
	4/12-29	Pakistan			
	10/21	Qatar			
	4/13	United Arab Emirates			
1998	6/9	Korea			
	7/14	Antilles (Netherlands)			
	6/10	Peru			
	7/15	Romania			
	6/9	South Korea			
	3/18	Taiwan			
2/27	Uzbekistan				
1997	9/18	Aruba			
	6/20	Brunei			
	5/8	Costa Rica			
	5/8	El Salvador			
	5/8	Guatemala			
	5/8	Honduras			
	6/21	Malaysia			
	6/18	New Zealand			
	5/8	Nicaragua			
	5/8	Panama			
4/8	Singapore				
1996	9/10	Czech Republic			
	5/42	Germany			

of air travel increased. Faster growing regions such as Asia saw double-digit growth rates during the 1980s and early 1990s.

Phase IV: 2001 and Beyond

Even before September 11th, the U.S. airline industry was on a path to lose US \$2 billion (Arndt, Byrnes, and Woellert, 2001). Part of the blame can be attributed to the same two historical forces that have plagued the industry for decades, a softening economy and over-capacity. As one famous disgruntled investor, Warren Buffet, has noted,

The airline business, from the time of Wilber and Orville Wright through 1991, made zero money net (Miller and Barnhart, 2001).

In fact, the industry suffered its worst previous loss between 1990-1993 when it posted losses in excess of US\$10 billion (Rosen, 1995). The airline industry is an old-line, cyclical industry with high fixed costs and a very unionized, powerful labor force. The industry that witnessed significant consolidation following deregulation has become increasingly concentrated with the top ten major carriers responsible for the carriage of the bulk of U.S. scheduled traffic.

While the remainder of the 1990s saw improved profitability, there were a number of troubling trends including sharp declines in overall service quality (rising customer complaints, delays), disgruntled high yield business passengers, and labor unrest at such airlines as United, American, and Comair (Rhoades and Waguespack, 2001). Even the US\$15 billion bailout of the Air Transportation Stabilization Act is not likely to prevent a number of U.S. carriers from filing for bankruptcy (Arndt et al, 2001). Meanwhile European carriers are already protesting this government aid and requesting assistance from their own governments (Flottau, 2001). Some of the hardest hit EU airlines are already requesting assistance (Sparaco and Wall, 2001).

If there were ever any questions of the economic importance of the air transport industry before, there are few who doubt it now. U.S. airlines have already announced layoffs of approximately 100,000 employees and some estimates claim that there will be an additional six jobs lost in the U.S. economy for each airline loss. The airline industry appears unlikely to turn a profit until at least 2003. Initially, the hardest hit area will be the travel and tourism industry, which generates over US\$578.8 billion a year and supports one out of every 17 jobs. Aircraft manufacturers such as Boeing will also be hard hit and are preparing for layoffs. Other aviation system manufacturers such as Rockwell Collins, Textron, Honeywell, and Goodrich are likely to follow suit raising manufacturing layoffs up to 100,000 (Arndt and Woellert, 2001; Isidore, 2001; Mecham, 2001).

FUTURE DIRECTIONS

Given the impact of recent events, the trend toward further liberalization in international transport is likely to stall and may well reverse itself as nations struggle to stabilize their aviation industries. The U.S. bailout smacks of the kind of government subsidy that the U.S. has historically derided other governments for providing and includes provisions that would see the U.S. government taking a non-voting stake in airline ownership through either stock options, warrants or other equity devices (Bond, 2001; Toh, 1998). Government authorities, particularly in the U.S., may well rethink their position on industry consolidation in the face of widespread industry bankruptcy. If the bankrupt carriers are allowed to continue operation as Continental and America West did during previous bankruptcies, the industry would likely face the same devastating price wars that have plagued it in the past as cash-strapped carriers drive prices down and keep capacity up (Wolf, 1995). The inability of air transportation to generate long-term profitability has driven stock prices down over 41 percent and downgraded some carrier's credit rating to junk bond status (Isidore, 2001). Insurance premiums

have risen by a factor of 15 for war risk and eight-fold for passenger liability (Sparaco, 2001). Increased security costs will either be passed onto consumers or borne by the U.S. government if security is federalized (Arndt and Woellert, 2001; Ott, 2001).

It is clear that liberalization will be at least temporarily stalled as governments struggle with the immediate security and economic issues raised by the terrorist attacks. The length of the stall is partly contingent on the global efforts to "root out terrorism." The long-term fate of international aviation is a matter of conjecture, but the following three scenarios seem most likely.

Scenario One

The trend toward liberalization reverses itself as nations revert to a very protectionist approach to aviation. The longer the war on terror, the more likely international aviation is to slip back into the old protectionist pattern. If the events of September 11th threaten to devastate national airlines and economies, governments are even more likely to take actions to protect jobs and markets. Even before 9/11, there were forces at work that sought to pull back from liberalization. Examples of this trend include the European debate over the fate of Sabena and Swissair. The Belgian and Swiss governments are intent on "saving" their national airlines for reasons that opponents believe violate the concepts of free, open markets. The Canadian decision to allow Air Canada to merge with Canadian Airlines was also seen as a resurgence of aviation nationalism. Most recently, Europeans have complained that the U.S. package of loan guarantees to post-9/11 carriers exceeded the level warranted by shutdown losses and should constitute illegal subsidies.

Scenario Two

Consolidation accelerates to the point that national governments feel forced to consider allowing at least limited foreign involvement in domestic markets as a means of generating

competition. This has already occurred in Canada where government officials have not only indicated that they might consider allowing foreign carriers into the domestic market but have floated a proposal for a North American single aviation area. Under this scenario, a TCAA might also come about for several reasons. First, the security levels of most EU carriers are at least equal if not higher than current U.S. levels. Secondly, allowing EU allies in the war on terror into the U.S. market would be more palatable than throwing the market open to all foreign nationals. Finally, it might be seen as a reasonable concession to allies who have pushed for such an opening. In an effort to aid their airlines, the EU members might push even harder. They could be aided in their efforts by a decision due out in early 2002 from the European Court of Justice on whether the EC has the right to negotiate aviation agreements with countries outside the EU. If the EC were to declare the EU a single aviation unit, then the extensive "beyond rights" of US carriers would be considered cabotage and voided (Bond, 2001).

A number of issues would have to be resolved before this scenario could come about including changes in ownership rules, right of establishment, and harmonization of a number of the laws and policies affecting aviation including anti-trust policies, operation of aircraft, leasing, etc (European Cockpit Association, 2000). There could be a disconnect between the domestic and international markets. In an effort to reduce costs, many major carriers have announced plans to withdraw from less profitable domestic routes, many of whom will see regional carrier entry (Ott, 2001). In addition, the growth of general and business aviation could continue as aviation fears, disgruntled business passengers, and flexjet leasing programs make it an attractive option to commercial travel. Major carriers would then focus more on international aviation. In effect, there would be a system of smaller, regional carriers linking to major, international hubs. With a further relaxation of ownership rules, it is possible that the Australian/New Zealand proposal at the Chicago Convention for internationally owned and managed carriers

would finally become a reality. The current mega-alliance (Star, Oneworld, SkyTeam) structure might form the nucleus of such carriers.

Scenario Three

In a further twist, it is possible that the industry would decouple even further into distinct businesses such as fleet management, transportation, and marketing (Sparaco, 2001). This decoupling might allow the industry to get around some of the ownership restrictions that currently prevent international consolidation. Arguments for this type of decoupling draw their rationale from two distinct but related fields of strategic thinking. The first area is concerned with defining a firm's core or distinctive competency. This resource-based view of the firm suggests that firms are collections of tangible and intangible assets that when combined develop competency in certain areas. This competency is defined as a skill, knowledge or ability that a firm possesses that allows it to achieve a competitive advantage over its rivals (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). Under this theory, airlines would determine what activity they could perform better than rivals, then focus on this activity and outsource other activities to firms that have an advantage in that area.

The second, related area concerns the value chain. In essence, a firm is a collection of linked activities that may produce value for customers (Porter, 1985). In a decoupled system, higher profits would accrue to firms performing higher value-added activities. Industries can be said to have value chains, sequences of activities that lead to a final product or service. In manufacturing settings such as automobiles, aircraft, etc., it appears that the integrator (firm responsible for some parts manufacturing, supply network management, and final product assembly) earns the superior industry returns (Galbraith, 1995). For the airline industry or more broadly speaking the travel industry, the question becomes who in the value chain is best able to assume this role. To a limited extent, the

travel agent once performed the role of integrator, but this role has been undermined by cuts in commission fees, internet access, and other direct marketing efforts. Conceivably, a firm or group of firms could assume this role, adding value to customers by packaging multi-modal transportation with accommodations, vacation packages, etc.

Theoretically, the idea of a "virtual airline" that outsources aircraft, cockpit/cabin crew, engineering and maintenance, ground handling, accounting, and reservations is appealing (International Civil Aviation Organization, 1997). This would allow the virtual airline to escape two factors that tend to plague the industry during economic downturns—overcapacity and high labor costs. The virtual airline would possess the flexibility to reduce both labor and fleet quickly. The practical details of the virtual airline are more perplexing. On a small scale, the concept appears workable, but envisioning a virtual airline the size of American Airlines is difficult. It is also difficult to envision how a traditional airline like American could make the shift to virtual. For example, a shift to outsourced fleet and crew would likely have to be gradual and would incur the opposition of existing labor unions who might well be prepared to take labor action to prevent the shift.

MANAGERIAL IMPLICATIONS

The international aviation industry is clearly at a crossroads. While the industry and the governments who regulate it might be tempted to fall back into the familiar highly regulated days of the past, it is doubtful that we will see a complete reversal if for no other reason than customer dissatisfaction. Airline managers, government officials, and the industries that support aviation need to begin planning for this "brave new world." The key unknown in these calculations is the timeframe. Change is not something that individuals or firms tend to embrace gladly, so it is likely that the industry will seek to draw out the transition to something like a TCAA on the argument that firms need

time to make the structural adjustments necessary. A similar argument was made for NAFTA phase-in. For the near term, scenario two seems most likely to succeed in some form. The rationale again stems from the fact that this change is more of an extension of what went before than the decoupling of the industry that would represent a dramatic shift in mindset, core competency, and basic industry givens.

A number of questions remain unresolved in the decoupled scenario that makes it difficult to determine its viability or establish any time-frame for implementation. First, it is unclear how and/or why firms might choose a given decoupled segment from a value and profitability perspective. As stated earlier, the two areas that have generally been cited as preventing the industry from achieving long-term profitability are overcapacity and labor problems. Individual airlines in good times tend to add aircraft to their fleet. Then, the inevitable bad times occur and the overall industry is faced with overcapacity. Individual carriers with new, expensive fleets tend to attempt to lower prices to fill seats cutting into margins and triggering price wars. It is unclear how a decoupled fleet management firm would derive long-term profits. There are likely to be some "economies" to exploit and it is possible to compensate for regional downturns by shifting fleets, but a global downturn like the post-9/11 environment would seem to put such firms at high risk. The issue becomes—What type of firm would seek to fill this decoupled niche? Some firm must do so to make the overall system work. In regard to the second factor affecting long-term profitability, there are examples of firms outsourcing maintenance. There are clearly "economies" to be gained by consolidating maintenance. It also would be possible to outsource flight attendants. However, the key labor group has always been pilots. In bad times, they have given up wage/working conditions to aid firms, but these concessions have been the target of immediate concern when profits return. Any scenario that threatens this group is a likely to stir rapid reaction. When the idea of using flight crews from lower wage

alliance partners was floated, unions were quick to form inter-alliance union groups to block these efforts (Gill, 1998). Even the reservation/yield management systems a la Sabre that have often been viewed as a key source of advantage in the industry have come under criticism for creating complex pricing schemes that drive away customers, particularly the high margin business travelers that support the much larger low fare passengers. This is not to say that it is not possible to develop a business model for decoupled segments that would be capable of attracting investment, but it is an elusive possibility.

Under Scenario Two, the international carriers would restructure their routes and fleets toward the international long haul market leaving the domestic markets to short-haul, lower cost carriers that would feed international hubs either because of market forces or marketing agreements with the international carriers. This would be more of an adjustment of U.S. carriers than those in Europe where the flag carriers have primarily focused on international routes. Competition between individual carriers in a TCAA would focus on several key areas: cost and fare structure, service quality, and route structure/access. In a study of cost competitiveness among international carriers, Oum and Yu (1997) found that U.S. carriers are more cost competitive than all but a small number of Asian carriers that benefit from lower labor costs. This allows U.S. carriers to offer lower fares and still make a profit. On the other hand, U.S. carriers are rarely rated highly in surveys of international service quality (Zagat, 1992). It is less clear how consumers in an open aviation market would make the tradeoff between price and service quality.

CONCLUSION

Air transportation is a critical link in the global system. It has been an enabling factor in a process of globalization that has witnessed the fall of most tariff barriers, the establishment of the World Trade Organization, and the integration of many national economies into

broader trading associations. Yet, air transportation itself has only reluctantly been dragged along the path to liberalization. The events of September 11th can either jumpstart a new era of liberal air transportation or stall

recent efforts to achieve liberalization. The United States can lead air transport liberalization as it has led other efforts to open markets and economies but only by taking certain risks with its own air transportation system.

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