The Threat of Low-Cost Competition as a Driver of Airline Alliance Formation

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Abstract

Alliances are a key way through which airlines collaborate in search of profits. Competition from low-cost carriers necessitates cost reduction and drives legacy carriers to search for new sources of revenue. Legacy carriers find methods to compete with low-cost carriers through alliances with other carriers. This honors thesis will study how the competitive threat from low-cost carriers has driven the formation of alliances.

Low-cost carriers have disrupted the airline industry as a whole by creating an entirely new airline business model focused on “no-frills” and providing the customer with low fares. It is understood that legacy carriers ally with one another as a method of sharing resources, reducing costs, and finding opportunities for international expansion. I argue that these reasons for alliance stem from the competitive threat of low-cost carriers, which has necessitated collaboration among other airlines to continue to compete and provide a valuable service to customers.

To turn a consistent profit, airlines need to cut costs like labor, fuel, and passenger service to compete with low-cost carriers. Although some may perceive that low-cost carriers are directing the airline industry, legacy carriers continue to have the advantage over low-cost carriers in long-haul, intercontinental flights. While the source of alliance formation stems from a competitive environment, legacy carriers have a new opportunity for revenue in the international aviation market.

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Terminology

The following terms are used throughout this thesis to analyze the impact of low-cost carriers on alliance formation.

Legacy carriers. Legacy carriers are those airlines that existed prior to deregulation of the airline industry in the United States and in Europe. These airlines typically have a large, diversified fleet and operate on a hub-and-spoke system, which filters flights from various locations through a single hub. Examples of legacy carriers include United Airlines, American Airlines, Lufthansa, and British Airways.

Low-cost carriers. Low-cost carriers, synonymous with "budget airlines" in analyses of the airline industry, are focused on cutting costs wherever possible to offer cheaper fares to passengers. Examples of these cost-cutting initiatives include flying out of secondary airports, utilizing the same type of aircraft, and operating under a point-to-point model (a series of nonstop flights from one destination to another). Southwest Airlines pioneered the low-cost carrier business model; other names include Frontier Airlines, EasyJet, Ryanair, and Spirit Airlines.

Hub-and-spoke system. A hub-and-spoke system is a method of consolidating passengers and flights by operating an airline's flights out of several central hubs, using these hubs to connect to other cities served by that airline. For example, United Airlines has hubs at Denver International Airport and Chicago O'Hare International Airport. If a passenger has a flight from Dallas, Texas to Seattle, Washington, a typical ticket will include a layover in one of these two hubs. Rather than flying nonstop from Dallas to Seattle and trying to fill that plane, the airline will fly from Dallas to Denver and then from Denver to Seattle. It is likely to have more passengers on a flight from Dallas to Denver because more passengers will leave Dallas and use

the hub in Denver to connect to various cities. In this way, United is more likely to fill planes and meet the demand for a variety of routes, rather than only the demand for the Dallas to Seattle route.

Hub-and-spoke systems are primarily used by legacy carriers because this system allows for better organization of passengers and ensures a higher aircraft density (more passengers are on one plane). "… a hub generates up to 20 percent more revenue per plane than a comparable point-to-point flight" (Gittell, 2003, p. 15). For legacy carriers, a hub-and-spoke system is the most profitable.

Although legacy carriers are typically the airlines using the hub-and-spoke system, JetBlue is an exception. JetBlue is a low-cost carrier that is operating under the standard low-cost model, but JetBlue is implementing the no-frills model on the hub-and-spoke system, unlike other low-cost carriers (Gittell, 2003, p. 223). The success JetBlue is having may indicate future movement towards the use of the hub-and-spoke model in the low-cost carrier model, providing a new way for low-cost carriers to consolidate their flight networks.

Point-to-point system. In the example of the passenger flying from Dallas to Seattle above, the point-to-point model offers a nonstop flight from Dallas to Seattle, eliminating the stop in Denver. The nonstop flight would decrease costs incurred from landing fees because the airline does not land in Denver. Low-cost carriers pioneered the point-to-point system and appeal to a market of passengers who want to fly quickly and cheaply. However, the point-to-point system may yield a lower load factor, meaning the individual aircraft is not as full. A high load factor is necessary to cover the high costs of operating a flight. Without enough passengers, the flight could be operating at a loss.

Merger. There are two key ways that airlines can collaborate. The first is a merger, which occurs when one airline absorbs the operations and resources of another airline. The most recognizable example of a merger today was the recent US Airways and American Airlines merger, which was officially finalized on Oct. 17, 2015, when the website belonging to US Airways went blank and the last US Airways flight landed (Harlan, 2015). Southwest Airlines merged with Air Tran in 2011.

Alliance. The second way that airlines collaborate is through alliances. Alliances occur when two or more airlines agree to share resources and revenues with the goal of mutual gain. In *Evolution of International Aviation*, Dawna L. Rhoades defines an alliance as "an agreement between two independent firms to share resources in a jointly governed project that helps each individual firm achieve specific, not necessarily shared, goals" (Rhoades, 2016, p. 127). This definition implies that, in an alliance of two airlines, each airline has specific goals for its membership in the alliance, and both airlines contribute to one another's operations to achieve these goals. There is a mutual gain and both airlines continue to operate under individual companies that share resources.

Codesharing. Usually going hand-in-hand with the discussion of alliances is a mention of codesharing, which is an important element of alliance agreements. According to Rhoades, codesharing occurs when "one carrier offers service under another carrier's flight designator" (Rhoades, 2016, p. 130). Oum and Park define a codesharing agreement to be:

> "a marketing agreement between two airline partners whereby one airline's designator code is shown on flights operated by its partner airline. Codesharing agreements allow each airline involved to provide services with its partner's flights, even though it does not operate its aircraft" (Oum & Park, 1997, p. 135).

Codesharing enables flights within the same alliance to be published on customer reservation systems numerous times. Customers are more likely to book the same flight through a variety of different airlines within the same alliance. If a customer books an intercontinental flight with United Airlines that is operated by Lufthansa, both United and Lufthansa earn revenue. Airlines are able to share costs and revenues.

Chapter 1: Introduction

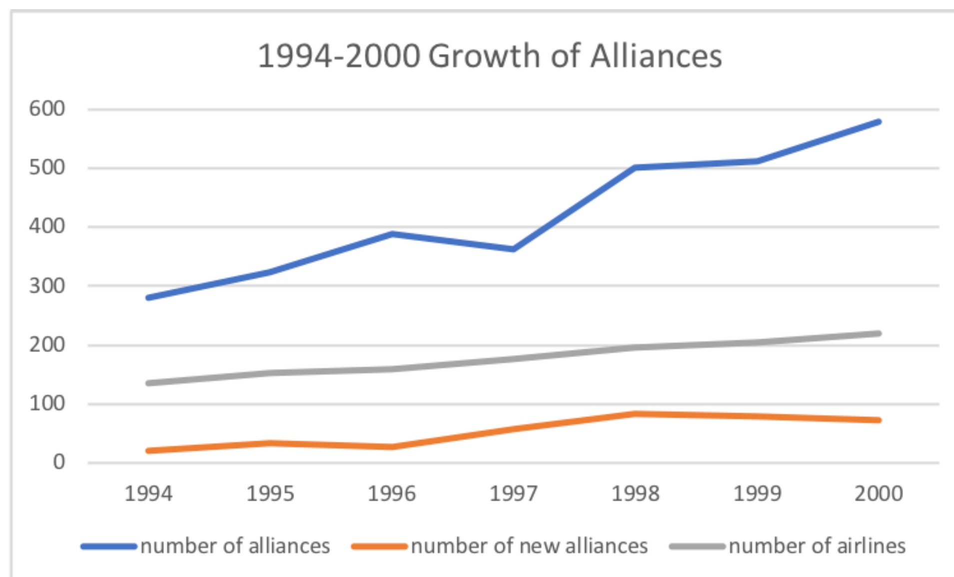

Figure 1: Growth of Alliances 1994-2000 (Rhoades, 2016)

The 1990s saw the first significant growth in the number of airline alliances. During this time, three mega-alliances – Star Alliance, Oneworld, and SkyTeam – developed and brought the discussion of airline alliances to light. As shown in Figure 1, the number of alliances grew from 280 in 1994 to 579 in 2000. Over the six-year period, the number of alliances grew 107%. Did airlines decide to join these mega-alliances at such a rapid rate because many other airlines globally were doing the same thing? Was there some shift in the business cycle or a disruption to the industry that would have inspired enhanced alliance formation? Did the competitive threat from low-cost carriers, also known as budget airlines, demand a new way for legacy carriers to conduct business?

In this honors thesis, I study how competition from low-cost carriers has driven the formation of airline alliances. I contend that the need for cost reduction has been necessitated by low-cost competition. International expansion through alliance formation is a method by which legacy carriers can compete with low-cost carriers. Low-cost carriers have disrupted the

international airline industry by decreasing costs to new lows and offering low fares to consumers. This disruption has created a polarized airline industry between legacy carriers that have existed for many years and find success operating internationally, and the smaller low-cost carriers that hold the power of the low-cost-seeking consumer.

I examine a history of low-cost carriers and airline alliance formation to test my overarching hypothesis that low-cost carriers have driven alliance formation. Similar discussions of alliance formation have pointed to cost reduction and international expansion as primary drivers for airlines to ally. These reasons remain true, but I argue that these reasons for alliance were driven by low-cost competition. Cost reduction is a necessity in the current environment of the airline industry because of the standard set by low-cost carriers. International expansion provides legacy carriers and alliances with a new source of revenue and competitive advantage relative to low-cost carriers.

Sharing resources and personnel decreases costs that inhibit positive profit margins. Allying with other airlines also allows for a broader global reach, attracting consumers traveling internationally and gaining access to new markets. Through alliances, airlines contribute to making the alliance as a whole well-established in international operations, stronger against competition, and more profitable than if the airline were acting alone.

There may be political factors that contribute to alliance formation. For example, the creation of the European Union and the creation of the single EU aviation market may motivate airlines outside of the EU to create alliances with the EU because of the ease of access to 28 member states. This thesis, however, looks purely at the competitive landscape that has been developed by low-cost carriers.

The no-frills business model inherent to low-cost carrier operations will continue to disrupt the success of airline alliances and their traditional model because of the ability for low-cost carriers to eliminate costs. Airlines that are well-established in the industry have a more difficult time cutting costs in labor. Low-cost carriers have a foundation of eliminating unnecessary costs, especially those regarding labor, so low-cost carriers are at a significant advantage compared to legacy carriers in terms of methods of mitigating costs. A more in-depth analysis of cost reduction is provided in Chapter 5.

Globalization is another driver of further expansion. As the world becomes more interconnected and globalization continues, airlines need to be able to fly internationally and serve consumer demand for international airline travel.

I predict that the need to reduce costs arises from a largely competitive mindset, responding to the imposing threat of low-cost carriers. Through airline alliances, legacy carriers must compete with low-cost carriers to maintain a solid customer base. Low-cost carriers are swaying many consumers not based on service quality, as is standard for legacy carriers, but based on low fares.

Why do alliances matter? How do the day-to-day operations of the airline market affect the everyday consumer? “In its Vision 2050 report, [the International Air Transport Association] predicts that there will be continued growth in passenger traffic with 16 billion passengers by 2050” (Rhoades, 2016, p. 285). The airline industry continues to grow at a remarkable rate. Passengers are gaining access to a greater number of airlines with an extensive international reach. Because of the growth projected by many aviation experts, it is important to continue to study and analyze the airline industry to assess the impact of changes in the market and to predict the future of airlines.

The current airline market is polarized between the legacy carriers, long-standing airlines beginning essentially from the inception of commercial aviation, and newer low-cost carriers that have developed after deregulation. The topic I study in this thesis is important for further study because the future of the aviation industry lies in the potential success of low-cost carriers contrasted with the existing success of legacy carriers as members of alliances. Low-cost carriers disrupt the current aviation market by severely cutting prices, lowering the standard fare on several routes, and thereby influencing the success of legacy airlines. Legacy carriers are pressed to make drastic changes to cut costs or to find new markets to serve, often leading to the union of legacy carriers in airline alliances.

Both businesses and consumers in the economy are influenced by the airlines and attempts at decreasing costs. The deregulation of the airline industry may have allowed for reduced barriers to entry for new airlines and freedom from governmental oversight, but it also increased competition.

For consumers, the deregulation of the airline industry typically resulted in lower fares because of more competition and diversified options available for air travel. In addition, deregulation allowed for more airlines to enter the market due to lower costs and diminished barriers to entry, which implies that consumers have obtained access to more choices in number as well as in value.

Chapter 2: Background

<u>The Chicago Convention</u>

Following the conclusion of World War II and the influx of technological advancements in aviation, a need to regulate civil aviation arose in the new, post-war world. Held in 1944, the Convention on International Civil Aviation (more commonly known as the Chicago Convention) facilitated discussion on the status of the international aviation regime (Nayar, 1995).

The Chicago Convention established the freedoms of flight, which cultivated growth in the new aviation industry while also protecting state sovereignty. Along with the freedoms of flight, the Chicago Convention reaffirmed the principle that each nation-state had sovereignty of the airspace over the entirety of its territory. The freedoms of flight facilitated a compromise between revenue-seeking airlines and protective heads of state by allowing for aircraft to use this sovereign airspace only after gaining permission from the state and allowing for airlines to collect more passengers when having a layover in said state (Wendover Productions, 2016b).

The International Civil Aviation Organization (ICAO) was created to “foster the planning and development of international air transport” (International Civil Aviation Organization, 1944, p. 20), which includes ensuring security in aviation worldwide. The ICAO is an inter-governmental organization hosting member states within the body of the United Nations. A non-governmental organization, the International Air Transport Association (IATA) sets airline fares for consumers by offering a space for airlines to discuss and compromise on issues that may arise (Nayar, 1995, p. 168-169).

Many years following the Chicago Convention, the United States again forged a new path in aviation by choosing to deregulate the American airline industry, removing government

oversight and allowing for airlines to set prices. The US passed the Aviation Deregulation Act in 1978 (Rhoades, 2016, p. 62).

Goetz and Vowles wrote a paper on the effects of the Aviation Deregulation Act, providing an economic analysis of the airline industry and a review of the results of US airline deregulation. The authors break down the results into three categories: the good, the bad, and the ugly. Some of the good that occurred from deregulation include an increase in passenger volume, a decrease in average fare price, a continued importance of safety, and a growth in bilateral agreements that have connected passengers around the world to international destinations. Some negative results of deregulation in the US include high turnover rates (which affect job security), a decline in quality, more delays, and fare differences across the country. The "ugly" largely pertains to financial success – or lack thereof. Bankruptcies and mergers are common in the industry due to intense financial requirements and volatility to fluctuations in the economy (Goetz and Vowles, 2009). One of the hypothesized reasons that airlines ally is to mitigate these costs and stimulate financial stability.

Evaluating the European side of the airline industry and the EU liberalization packages is important for studying international airline alliances. Trans-Atlantic flights are a staple of the legacy carrier business model and these flights would be much more difficult to negotiate without the liberalization of the European airline industry.

In his assessment of liberalization in the European Union, Graham created the table shown in Figure 2 to better understand the process of liberalizing the European aviation industry. Liberalization was completed in three packages, but the final deregulation did not occur until 1997, which gave airlines the ability to set prices and share access to routes (Graham, 1997, p. 808).

Table 2. The three EC air transport liberalization packages

1 Implemented from 1 January 1988	Allowed multiple designation, fifth-freedom rights, automatic approval of discount fares; double disapproval rule applied to full fares
2 Implemented from 1 November 1990	Second Package.
3 Implemented from 1 January 1993 – final implementation 1 April 1997 Permits: • free pricing on all fares • full access to all routes including cabotage • abandonment of distinction between charter and scheduled carriers • protection for routes designated as public service obligations • EC retention of right to intervene against fares, predatory pricing and seat dumping	

Source: GRAHAM, 1995.

Figure 2: European Union Liberalization (Graham, 1997)

Cabotage, mentioned in Figure 2, is the right to operate a domestic flight, no matter where the airline is from (Graham, 1997). Fifth freedom rights give airlines the ability to fly revenue-earning passengers internationally as a portion of the service provided by that airline (Wendover Productions, 2016b). Without the fifth freedom, passengers would be required to transfer to another airline during layovers in major hubs to reach their final destinations. For example, a passenger flying Delta Airlines from Atlanta, Georgia to Brussels, Belgium, would have to change flights in France. The French government would only allow passengers from the United States to fly to France, but a French or Belgian airline would fly those paying passengers on a separate flight to the final destination of Brussels. Without the fifth freedom, airlines looking to expand internationally would not be able offer connecting flights in foreign nations.

Bilateral Agreements

Bilateral agreements arose following the conclusion of the Chicago Convention. Bilateral agreements are contracts between two nations that allow for aircraft originating in one nation to fly in the sovereign airspace of another nation. These agreements are complex and vary for nearly every pair of countries, but the core tenets remain largely the same. The first bilateral agreement was the Bermuda Agreement between the United States and the United Kingdom, which served as the model for future agreements. The Bermuda Agreement provided for IATA to set the fares of the flights, the allowance for the airline to determine the aircraft capacity, and defined a list of the routes that can be flown between the two countries.

In the United States, bilateral agreements are necessary for the operation of international flights as well as the approval of an international airline alliance. According to Gellman Research Associates:

> "the US DOT [Department of Transportation] clarified its position on international alliances, declaring that an international alliance would not be approved under the US DOT policy unless it was covered in a bilateral agreement or otherwise brought benefits to the US and unless the foreign country also allow US carriers' codesharing rights in its market" (Oum & Park, 1997, p. 135).

Alliances could create a global airline, which opens the question for a monopoly of the industry. The Department of Justice and the European Commission combat the anti-competitive merger and alliance of airlines, as applicable, that would disrupt the competitive market. The US DOT is working to mitigate that possibility of a monopolistic global airline that limits competition and gives pricing power to the airline. Similar moves are being made in Europe to combat the potential for unfair competitive practices in the airline industry. According to McNeill, 1993,

> "unlike the US, the EU does not require approval proceedings for international codesharing and/or block space sales agreements within the Union, but rather examines their impacts on competition. Their carriers are generally free to enter into such agreements anywhere within the Union unless it results in a monopoly" (Oum & Park, 1997, p. 135).

Thus far, an airline alliance monopoly has not occurred. The influx of low-cost carriers in the market has created competition that mitigates the possibility of a monopoly.

Defining Low-Cost Carriers

Southwest Airlines pioneered the low-cost carrier business model. Based on a no-frills model, Southwest Airlines inspired the formation of other low-cost carriers, such as Ryanair (Creaton, 2004, p. 62). "On March 15, 1967, Kelleher [the CEO of Southwest Airlines], filed the papers to incorporate Air Southwest Co." (Freiberg & Freiberg, 1996, p. 16). Southwest Airlines was established about ten years before deregulation in the US and served as "the only intrastate carrier when the federal Aviation Deregulation Act was passed in 1978" (Freiberg & Freiberg, 1996, p. 25). Southwest became a major player in the aviation system after deregulation because of its novel business model and low fares.

Ryanair, an Irish low-cost carrier, copied the Southwest business model and took it further by removing the window shades and charging for carry-ons, but Ryanair did not adopt the same cultural elements that Southwest finds key to success (Rhoades, 2016, p. 205). The Southwest Airlines culture is praised as the driver of the airline's success. Several books have been written about the culture of Southwest Airlines in an attempt to explain how the low-cost carrier continues to succeed despite economic downturns and other struggles that have impacted the airline industry.

Ryanair, following the low-cost model, is a strong challenger to the standard legacy carrier in Europe. In fact, "since Ryanair entered [the Dublin-London] market in 1986, demand has quadrupled, pushing down the market shares of former incumbents British Airways and Aer Lingus" (Franke, 2003, p. 18).

To determine what it is that defines a low-cost carrier, I pull information from a video created by Wendover Productions, which is titled "How Budget Airlines Work". While the term "budget airlines" is used in this video, I employ the term "low-cost carriers" to refer to those airlines who operate under a cost minimization, no-frills model.

The video focuses on European low-cost carriers because the author believes that European low-cost carriers were the first to thrive. The author finds that Ryanair and EasyJet are significantly cheaper than other European airlines, whereas low-cost carriers in the United States, such as Frontier and Spirit, are only marginally cheaper than their counterparts.

The first cost-cutting initiative of a low-cost carrier is flying a single type of aircraft. By using only one type of aircraft, pilots and mechanics need to be certified to operate one type of aircraft and thus require less training (which lowers costs). Because low-cost carriers fly one type of aircraft, they can obtain special discounts from aircraft suppliers by buying in bulk. A younger fleet of airplanes assists in cost reduction because younger aircraft tend to be more fuel efficient, which lowers fuel costs.

Flight attendants also take on many different roles, including acting as gate agents, aircraft cleaners, and even salespeople, which lowers labor costs. When flying Ryanair, a passenger hears several pitches conducted by flight attendants to buy food, duty-free items, or lottery tickets. Ryanair does not offer a free beverage or snack service because this is another incurred cost that violates the no-frills business model.

A considerable expense for airlines is the cost to land at airports and utilize facilities, especially in those airports that are more popular. Since busier airports have higher fees, low-cost carriers minimize costs by operating out of smaller airports with cheaper landing fees. Ryanair flies out of London Luton Airport instead of out of London Heathrow International Airport, just as Southwest Airlines flies out of Dallas Love Field Airport instead of Dallas-Fort Worth International Airport. Because low-cost carriers are often one of the only carriers flying out of a secondary airport, these carriers gain remarkable negotiating power to set landing fees and prices for airport utilities. Another method to reduce airport use costs is to fly into larger airports at less busy times, such as at night, when it is also less likely to experience delays due to airport traffic.

Low-cost carriers make sure to have their aircraft flying for the majority of the day. The time spent on the ground is about 30-45 minutes from the landing of one flight to the departure of another.

As noted by Freiberg and Freiberg in their book, *NUTS!*, the employees of Southwest Airlines know that the company is not making money when the plane is on the ground. Pilots, flight attendants, and ramp agents who are working on a given flight collaborate to unload passengers and bags, board passengers, turn the plane around, and put the plane back in the air as quickly as possible. This process happens in a grand total of ten minutes and is called the "ten-minute turn", pioneered by the motivated employees of Southwest Airlines (Freiberg & Freiberg, p. 43-44). To ensure a quick turnaround time, Southwest Airlines does not offer assigned seating and instead gives a boarding position to each passenger. This encourages passengers to get to the gate early to try to secure their desired seats and obtain adequate overhead storage space. The minimal amount of time spent on the ground means airplanes are essentially always making money.

An additional way that low-cost carriers are different from legacy carriers is that low-cost carriers operate their flights off of a point-to-point model rather than a hub-and-spoke model, as mentioned in Chapter 2. With this model, low-cost carriers have a network of nonstop flights. In Europe, however, this network of nonstop flights means that some flights may only be flown on certain days of the week.

Because Ryanair uses the point-to-point model, the company does not offer connections. If a customer were to purchase a ticket from Bordeaux, France to Prague, Czech Republic, the customer would have to stop in Brussels, Belgium. The first flight would be from Bordeaux to Brussels, then the second from Brussels to Prague. Ryanair does not permit layovers, so the passenger would need to purchase two flights (four flights roundtrip). By enforcing a no-layover policy, Ryanair removes itself as a liability if the passenger misses a leg of his/her flight. Requiring passengers to book on two separate itineraries serves as a way to reduce costs because, among other reasons, the number of ground crews and baggage handlers is decreased. Ground crews are still required to transfer checked bags from the plane to the carousel for each destination, but the number of ground employees is decreased if there are no required crew members to transfer bags to various flights around the airport. This also puts the responsibility on the passenger to make the connecting flight.

The idea of separate itineraries is contradictory with legacy carriers. It is typically standard for legacy carriers that, should a passenger have a flight from Denver to San Francisco then on to Paris and the passenger misses his/her second flight because of a delay in the first flight, the legacy carriers would incur the expense of transferring this passenger to another flight later in the day. It is important to note that the transfer of passengers between flights or among airlines only exists within an airline or alliance. Low-cost carriers eliminate this potential cost

and frustration by not permitting a booking for connecting flights. This also eradicates the need and the expense for a more complicated ticketing system.

Ryanair does not use ticket agents. Ryanair charges a 45£ (45 British pounds) fee if a passenger does not arrive at the airport with a printed ticket. Check-ins are handled by machines, which also diminishes labor costs.

Wendover Productions ultimately says that low-cost carriers "can make a lot of money - if done right". "EasyJet, Ryanair, and WizzAir all have higher profit margins than Lufthansa, British Airways, and AirFrance" (Wendover Productions, 2016a).

The traditional legacy carriers appeal to customers who fly often and like the consistency of one airline. These customers usually include business travelers, but low-cost carriers in the United States, such as Southwest Airlines, were created to give business travelers more flexibility, especially the ability to purchase a ticket for a lower cost closer to the departure of the flight. Low-cost carriers in Europe, on the other hand, are used more for tourism and leisure travel, so if Ryanair offers a flight to Lyon for 10 Euros, then the demand to go to Lyon will increase - not because of the appeal of Lyon as a destination but because of the low fares to fly there (Wendover Productions, 2016a).

The Impact of Deregulation

"Airline deregulation has been praised for the dramatic lowering of fares and [cursed] for creating the destructive price competition that has been a part of the financial crisis experienced by the industry... International liberalization has faced similar charges" (Rhoades, 2016, p. 320). The deregulation of the industry did help consumers by lowering the fares that consumers are asked to pay, but the price cuts have also decreased revenues and limited additional profit opportunities.

The aviation industry would not be the same today without the passing of the Chicago Convention, the implementation of bilateral agreements, deregulation of the airlines, and the creation of new airlines and airline alliances. Without these changes, it is possible that more passengers would be choosing to drive or take the train rather than fly due to high fares. The world would not be experiencing the present interconnectivity because there would be more barriers to international travel.

Although deregulation and a lack of government aid made obtaining consistent profit margins difficult, airlines have gained more freedom in conducting business. Consumers benefit from low fares and superior connections to the rest of the world.

Chapter 3: Understanding the Transforming Airline Industry

Defining an Airline Alliance

Both the Chicago Convention and the resulting bilateral agreements paved the way for the construction of agreements between international carriers that would prove to be mutually beneficial. Following the Chicago Convention, governments began to regulate their airlines, providing financial aid to compete with international carriers on international routes. However, the domestic competitive environment was almost non-existent. To generate competition, the United States spearheaded the movement to deregulate the airlines and allow for the market to determine competition and prices. Deregulation opened up the market for new entrants, new business models, and new sources of revenue. In the wake of new competition, legacy carriers required the development of new strategies to compete with the new carriers. The formation of an airline alliance was the primary strategy adopted by legacy carriers at this time.

The first considerable movement towards alliance formation occurred in the late 1990s, when the number of alliances grew at a remarkable rate. For the 20 years following mass alliance formation, the industry developed into two fields: mega-alliances and low-cost carriers. Bilateral agreements between international airlines merged into these three mega-alliances known today: Star Alliance, Oneworld, and SkyTeam. In 1997, Oum and Park wrote that alliances are not a fad at the end of the 1990s, but that airline alliances would exist and succeed for the foreseeable future (Oum & Park, 1997). 20 years later, the airline industry continues to be driven by airline alliances, confirming Oum and Park's prediction.

There are three types of airline alliances at varying levels of integration. In a survey of 46 airline alliances (as of July 1996), Oum and Park assess three different types of alliances as well as the actions that these alliances take to increase profits and share resources. The results are

summed up in a discussion of three main types of alliances: Type I is a simple route-by-route alliance, Type II is a broad commercial alliance, and Type III is an equity alliance (Oum & Park, 1997).

Type I alliances are the simplest form of an alliance, employing codesharing and incorporating only a few airlines.

Type II alliances involve cooperation via the “coordination of flight schedule and growth handling, joint use of ground facilities, shared frequent flyer programs, codesharing, block seat sale, and joint advertising and promotion” (Oum & Park, 1997, p. 138). Type II represents the mega-alliances seen in the airline industry today. Airlines collaborate through codesharing, providing customers with a streamlined experience, and distributing the costs of major expenses necessary for an airline venture.

Type III alliances add to the cooperation of Type II alliances by sharing more of the operational cost surrounding the aircraft, including the aircraft themselves, dividing the cost of jet fuel, and sharing pilots and flight attendants. (Oum & Park, 1997, p. 136-138). Type III alliances are less common because they look more like a merger of two airlines, relying on trust, collaboration, shared motivations, and equal partnerships in the alliance.

Within these three types of alliances, each individual alliance looks slightly different, dependent on the costs and services that each airline is willing to share. At the very least, most airlines joining an alliance implement codesharing. Beyond codesharing, the different levels of integration in airline alliances yield varying results in productivity and success. A recent influx of evidence indicates that alliances prove to be an unstable form of income, mostly due to a lack of trust or share of control. Alliances require trust among members to operate effectively because the airlines are sharing profit opportunities and resources. According to J. Feldman, Jurgen

Weber, the CEO of Lufthansa, “has noted [that] a key issue in many alliances is trust and the willingness to sell the other’s seats as forcefully as your own” (Rhoades, 2016, p. 127). The ability to effectively collaborate and promote the revenues of another business directly impacts the success of an airline alliance.

Trust is integral to alliance success. The sharing of resources, finances, and employees would not be possible without trust. If one airline has a goal of higher profits than another airline in the same alliance, distrust will grow between the two airlines as a result of more selfish actions. An unequal partnership may also result, as noted by Shumsky: “[If] one goal of an alliance agreement is to maximize network revenue, many of the agreements that are used in practice fall short of this goal” (Shumsky, 2006, p. 86). Businesses will continue to be self-seeking and strive to obtain as much individual revenue as possible. “…the most frequently cited problem with alliance partners was incompatible systems, policies, or procedures” (Rhoades, 2016, p. 128). Selfishness and inconsistency create problems for the airline alliance and may end in ultimate failure.

Shumsky argues, “the airline alliance that implements more advanced systems to share costs and revenues will both increase network profits and enhance the stability of the alliance” (Shumsky, 2006, p. 88). To combat the threat of low-cost carriers, alliances need to continue to collaborate and trust one another to expand their collective network of routes, share costs, and dominate the long-haul market. The more an airline “goes all in” with an alliance, meaning that they foster ultimate trust and invest their time, money, and resources into the alliance, the more likely it is that this airline – and the alliance as a whole – will realize greater profitability.

Drivers of an Airline's Decision to Ally

Given the types of alliances and considerations for success, what motivates an airline to go into business with another airline? According to Rhoades, there are four strategic drivers that may influence an airline's decision to ally, with whom it allies, and in what alliance type.

The first driver pertains to expanding operations by gaining entry into international markets that are typically restricted by the terms of bilateral agreements. According to Rhoades, alliances that want to operate internationally do not need to create those bilateral agreements that may require more time to write, dispute, and sign. However, as mentioned in Chapter 2, the United States DOT requires a bilateral agreement to exist for the approval of an airline alliance. With that in mind, this driver is not an existing factor for US airlines allying with foreign carriers. Fortunately, the US has already created bilateral agreements with over 100 countries (Rhoades, 2016, p. 99-101), so airlines in the US wanting to expand internationally have an existing collection of options. Most airlines looking to ally now join one of the mega-alliances – Oneworld, Star Alliance, or SkyTeam because of the existing large group of airlines as members, the revenue-earning potential, and the access to a wide array of resources.

Secondly, creating a global network permits an airline's passengers to travel freely and receive better services while also lowering costs inherent to an airline. Sharing the costs incurred from the operation of international flights mitigates the cost to one airline while also lowering the number of competitors on the same route. Member airlines of an alliance should only operate the number of flights demanded by international customers.

Thirdly, airlines may use alliances to reduce costs via collaboration on routes. To illustrate, consider that United Airlines operates the west coast of the US and Lufthansa serves most of Europe. Lufthansa can benefit from lower costs by simply sharing profits and resources

to extend operations to the United States. United provides the aircraft, routes, ticketing, and maintenance for the California routes, but operate under the alliance name, thereby generating revenue for the entire alliance through the power of codesharing. Alliances may also reduce costs by sharing some of the necessary components of airline business operation, like marketing, maintenance, and insurance. Similarly, alliances often share maintenance teams to eliminate redundancy and decrease labor costs.

The final driver mentioned by Rhoades stems from an inefficient market that cannot be served by only one carrier. Airlines that fly in these markets may need additional assistance from other airlines that have already been established in the area with maintenance personnel and positive marketing results (Rhoades, 2016, p. 129-131). The additional assistance may come from smaller carriers focused on regional flights.

These reasons that Rhoades defines largely pertain to routes and the network of flights available to each member airline. By allying with other carriers, alliance members can extend their reach around the world while also reducing costs that are incurred from inefficient or unprofitable routes.

In another study of these drivers of alliance formation, Oum and Park discuss several major reasons for airlines to engage in alliances. First, airlines ally to provide their services to a wider range of populations worldwide and ensure a more streamlined travel experience for customers. Alliances enable passengers to stay within the same area of the airport during layovers and provide customers with more options should a delay in the first leg of the flight cause the passenger to miss the second leg of his or her flight. To illustrate this point, I use the example of a passenger flying United Airlines from Denver to San Francisco, then San Francisco to Paris. If this passenger’s first flight from DEN to SFO is delayed due to maintenance on the

aircraft and the passenger misses the second flight of his/her trip, United will cover the costs to transfer that passenger to a later flight. With Star Alliance, United could transfer the passenger to a later flight with Lufthansa on the same route. Alliances enable a streamlined flight experience for passengers and give airlines more options for necessary transfers.

Service quality is an important element of flight for passenger satisfaction. Alliances may allow for a greater investment in service quality by sharing the costs of providing a better service. With higher service quality at the same price, airlines could attract other passengers, taking them away from their competitors. Alliances also give passengers more options, especially in the area of flight itineraries. Fewer stops and access to more airports allow passengers to create the travel experience they desire.

Lastly, codesharing generates revenue for the alliance as a whole because any given flight is shown multiple times on customer reservation systems (Oum & Park, 1997, 140-141).

The drivers that Oum and Park discuss in their paper largely revolve around the customer. These reasons reflect the desire for an airline to provide the consumer with a streamlined experience, ease of transfer, and high in-flight service quality.

The reasons for airlines to ally discussed above do not reflect the competitive landscape of the airline industry. Although all of these drivers are considerations and benefits that airlines receive upon alliance, I argue that behind all of these reasons is the need to compete with low-cost competition. The best way for legacy carriers to compete with low-cost carriers is to ally with one another, collaborate on routes, and dominate the international, long-haul market.

Benefits of Airline Alliances

Based on the existing research for reasons to ally, have studies shown that alliances prove to be effective for member airlines? Two relevant sources written in the early years of alliance formation point to overall welfare post-alliance.

The alliance between Northwest and KLM occurred in 1992. In this alliance, “US carriers as a whole gained only $0.4 million additional profit while the foreign carriers as a whole gained only $2.0 million additional profit” (Oum & Park, 1997, p. 142). Both consumers and member airlines benefitted from the alliance formation.

In 1995, the US General Accounting Office (GAO) interviewed several alliances to determine their margins and definitions for success. With the growth in alliances, passenger traffic grew. Most of this growth in traffic arose from the more competitive environment between airline alliances and those airlines that were not yet allied. While alliances are generally profitable for members, the gains for one member may be at the expense of another member, as shown in the British Airways-USAir alliance. British Airways captured a higher degree of welfare from the alliance, while USAir and American consumers did not gain the same level of welfare (Oum & Park, 1997, p. 141-142).

Following the GAO’s survey, authors Hannegan and Mulvey wrote an analysis of the impact of codesharing on airlines and consumers. By employing a codesharing strategy, airlines list all flights as if the flights were flown by one airline, which responds to “consumers’ preferences for booking connecting flights on the same airlines” (Hannegan & Mulvey, 1995, p. 131). According to the authors, passengers are happier booking their entire flight itineraries with one airline. Through codesharing, United Airlines, for example, can advertise the flight from John F. Kennedy International Airport (JFK) in New York to London Heathrow International

Airport (LHR) as a United flight, but it may be operated by Lufthansa. Passengers traveling to JFK and then on to LHR can book entirely with United, but United does not incur the costs of operating the international flight. Codesharing helps United and Lufthansa because both airlines gain access to new sources of revenue (from customers who book on either website), the cost of operating the flight is shared, and both airlines earn revenue from one flight. Consumers benefit from remaining within the same network of airlines by eliminating a need to retrieve baggage during the connection in JFK. Airlines within the same alliance usually share ramp agents to transport baggage, thereby allowing customers to remain in the terminal rather than leaving the secured area and necessitating another check-in process.

Hannegan and Mulvey study three major alliances in the US in 1995 – Northwest-KLM, created in 1992, USAir-British Airways, created in 1993, and United-Lufthansa, created in 1994. These alliances "have produced large traffic increases and improved their participants' combined market shares, [which is] in part because each of these alliances has achieved a high level of integration" (Hannegan & Mulvey, 1995, p. 133). The ability of alliances to codeshare and collaborate on flights increases profit margins and attracts more customers. Consumers benefit from alliances because of shorter layovers and an expanded international service.

The Competitive Landscape between Legacy and Low-Cost Carriers

The competitive landscape of the international airline industry changed dramatically after deregulation in 1978. Deregulation gave way to the rise of low-cost competition that captured a market previously dominated by legacy carriers. Consumers received lower fares and more diversified options, while airlines continued to make drastic moves to compete with other airlines in the field.

While airline alliances provide an advantage over fellow legacy carriers, alliances do not give legacy carriers a competitive advantage over low-cost carriers (Franke, 2003). Low-cost carriers and the point-to-point model have provided consumers with nonstop flight options. According to one author, the hub-and-spoke model will soon be antiquated because passengers prefer the ease and convenience of the point-to-point model over the complex, but potentially more profitable hub-and-spoke model (Pels, 2008).

According to Franke, airline alliances do not give legacy carriers the advantage over low-cost carriers, but legacy carriers can compete with low-cost carriers through the operation of intercontinental flights. I argue that the operation of these intercontinental flights should be facilitated through airline alliances. Within alliances, legacy carriers can share operating costs, lower the number of competitors on a given route, and generate revenues.

According to Saporito in the Time article “Cabin Pressure”, “successful airlines live on the extremes. They either become high touch-high service like Emirates or low-cost like Ryanair and Spirit” (Rhoades, 2016, p. 200). Airline alliances are a necessity in the airline industry today because it is more difficult for airlines to build up to the luxury level of the high-class Emirates or to reduce costs to operate as a low-cost carrier, such as Ryanair. Legacy carriers should ally and focus on sharing costs and providing a great service on intercontinental flights.

Airlines Ally as a Result of Low-Cost Competition

As discussed by other authors in the existing literature surrounding the polarized airline industry, the reasons for airlines to ally vary from reducing costs, providing a better customer service, and gaining access to a new network of routes. I argue, however, that the core motivator behind the decision for airlines to ally with one another is because of the threat of low-cost competition in the post-deregulation airline industry. The reasons that are discussed earlier in this

chapter embody more of the benefits that also arise from joining an alliance, but I argue that the primary driver is the inability to compete with low-cost carriers alone. Legacy carriers need to collaborate with one another to provide a streamlined and high-quality experience for customers, reduce costs, and enlarge the network of intercontinental flights.

The novelty of the low-cost carrier business model has dominated the discussion of the airline industry in recent decades. Several sources predict that low-cost carriers will dominate the industry and legacy carriers will fail. I plan to combat this claim by referencing several ways that airlines can compete with low-cost carriers through the power of global alliances.

My contributions to the existing research on the airline industry revolve around a discussion of a new, primary driver for the reason for airlines to ally. The competition from low-cost carriers that arose in the early 1990s drove legacy carriers to find a new way to compete – the mega-alliance. While legacy carriers may ally with one another for a plethora of reasons, I argue that the main driver of alliance formation, especially in the early 1990s, is the threat of low-cost competition.

Chapter 4: Research Design

I employ a variety of data and sources to test my hypotheses, including data from the Bureau of Transportation Statistics, data from the Federal Aviation Administration, and data from the Airlines for America organization.

To study the threat of low-cost competition as a primary driver of alliance formation, I study how legacy carriers and alliances can respond to low-cost carriers, how the reduction of costs is necessary to compete with the low-cost business model, and how legacy carriers can focus on international expansion to gain a comparative advantage over low-cost carriers, reaching a market for international travel.

A table representing the start dates of several American low-cost carriers, the three-mega alliances, and deregulation in the United States shows how airline alliances may have formed as a result of low-cost competition.

To illustrate one way that legacy carriers are attempting to compete with low-cost carriers, I point to several examples of a carrier within a carrier model, through which legacy carriers are creating small low-cost carriers within the operations of the existing legacy carrier. It is the general consensus that this system has turned out to be a failure, so legacy carriers should reorient their focus to international expansion with collaboration in airline alliances and integrating further to foster an international competitor with which it becomes difficult for low-cost carriers to compete.

To study why airlines ally as a method of cost reduction, I pull data from the Bureau of Transportation Statistics and Airlines for America. The Bureau of Transportation Statistics provides data regarding the operating revenue, net income, revenue passenger-mile, number of passengers, number of flights, and load factor for each of the last 16 years. Southwest Airlines, in the company's annual report, defines a revenue passenger mile as, "one paying passenger flown

one mile. Also referred to as 'traffic', which is a measure of demand for a given period" (Southwest Airlines, 2016, p. 41).

I use the information to depict the decline in net income over the years, showing the competitive power that low-cost carriers hold. These graphs show the net income from 2000 to 2016 for four major carriers in the United States: American Airlines, Delta Airlines, Southwest Airlines, and United Airlines. The point to be made with these graphs is that Southwest Airlines is continually turning a profit while the other carriers are struggling to stay above the zero line for more than one or two years at any given point, implying that low-cost carriers may be more successful.

Data from Airlines for America show some of the prevalent costs that are inherent to the post-deregulation airline industry. This data set represents each individual cost as a percent of operating expenses, showing the amount of money that goes into each cost.

In *Evolution of International Aviation*, Rhoades includes a conversation had with the CEO of American Airlines over areas available for cost reduction. This conversation encompasses areas like fuel, labor, and passenger service. The discussion serves as a good point from which I can further analyze the ways in which low-cost carriers have created a foundation of low costs and how legacy carriers should adapt to changes in the airline industry by cutting costs where possible. Alliances provide legacy carriers with a valuable opportunity to exploit economies of scale, decreasing costs further.

A driver for alliance formation is international expansion. I study this hypothesis as a method through which alliances can compete with low-cost carriers as the demand for international travel continues to grow with increasing globalization. To depict this globalization and the increased demand for international travel, I create graphs showing the number of

domestic and international passengers over a period of 30 years. The Bureau of Transportation Statistics provides the earliest data available, from 2002-2017. From 2017-2038, I create the graph using a percent change formula and predictions made by the Federal Aviation Administration concerning growth in the coming 20 years.

To show the potential for new revenues by expanding internationally, I use data from the Bureau of Transportation Statistics to study the passenger load factor on international flights for Southwest Airlines, United Airlines, Delta Airlines, and American Airlines. The load factor, represented as a percent, is compared with the year to create a scatter plot showing the load factor on international flights. I discuss the importance of having a higher load factor to offset the higher costs of operating international flights.

At the end of Chapter 5, I discuss Norwegian Air, the low-cost carrier that is finding success in expanding internationally and operating intercontinental flights. It is important for me to include such a discussion because it provides an example of disconfirming evidence for the premise that low-cost carriers struggle in the area of international expansion. I discuss Norwegian Air and its success, but I point to the debt accrual that the airline has acquired over the last few years. I then use an example of People Express, a low-cost carrier that expanded internationally too quickly and failed. I predict a similar outcome for Norwegian Air.

Chapter 5: Evidence

In Chapter 5, I analyze the threat of low-cost competition as a driver of alliance formation. First, I discuss how legacy carriers can respond to low-cost carriers, then I study how airlines can reduce costs and expand internationally within alliances as methods of competing.

Responding to Low-Cost Carriers

The deregulation of the airline industry supplied new sources of competition and more options for consumers. The low-cost carrier was born as a result of low barriers to entry and the demand for a new form of airline. Low-cost carriers challenge the existing legacy carriers, impelling these legacy carriers to find new methods of cost reduction and new sources of revenue. In the late 1990s, legacy carriers formed international airline alliances as a method of combatting the threat of low-cost carriers.

Alliances have served millions of passengers since their inception. There is no doubt that alliances are crucial to the conversation about aviation. Alliances continue to dominate the industry by offering passengers high-quality service and an expanded network of routes to transport customers internationally.

Currently, three mega-alliances dominate the airline industry: Star Alliance, SkyTeam, and Oneworld. Formed in 1997, Star Alliance began with five airlines and now includes 28 airlines (Star Alliance, n.d.). SkyTeam was formed in 2000 and is a collection of 20 airlines serving 177 countries, 1,074 destinations, and 730 million annual passengers. (SkyTeam, n.d.). Oneworld began in 1999 with an alliance between four major airlines – American Airlines, British Airways, Cathay Pacific, and Qantas. Oneworld now includes 34 airlines worldwide, operating over 13,000 daily flights and serving 530 million passengers per year (Oneworld, n.d.).

To study why airlines ally as a response to low-cost carriers, I assess the impact that low-cost carriers have had on the post-deregulation airline industry, deliver ideas on how airlines can compete with low-cost carriers, and analyze previous attempts of creating a low-cost carrier in an existing legacy carrier.

The Impact of Low-Cost Carriers on the Airline Industry

Following deregulation, low-cost carriers have disrupted the norm in the airline industry by lowering fares, severely cutting costs, and capturing profits. This competition has necessitated changes in the existing airline industry by the development of airline alliances.

Figure 3 represents data from Google Ngram, which depicts the frequency with which a phrase appears in publications relative to other phrases in similar texts available on the Google database of books and articles.

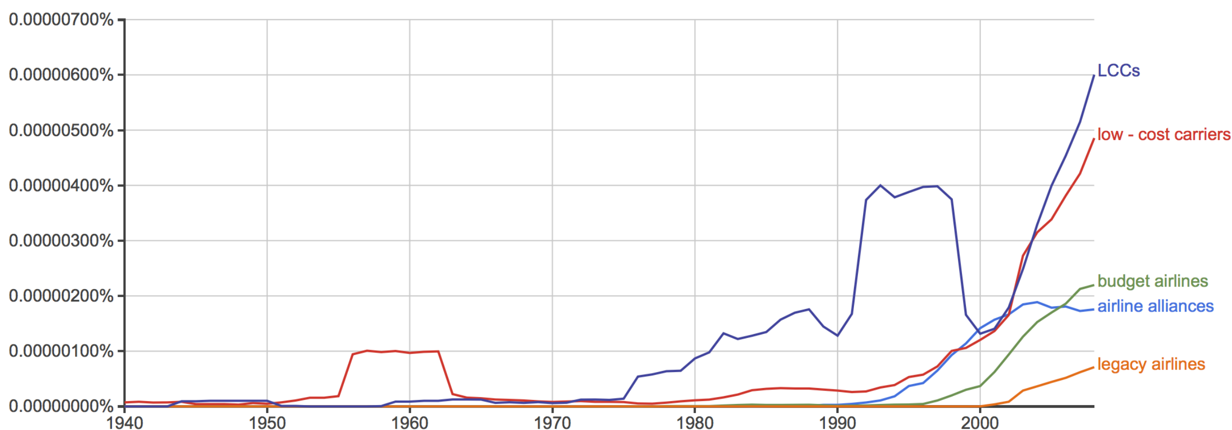

Figure 3: Google Ngram – the conversation around the evolving airline industry

From US deregulation in 1978 to the present, the surprise of the industry has been low-cost carriers (also known as LCCs) and has been the subject of several articles, discussions, and books.

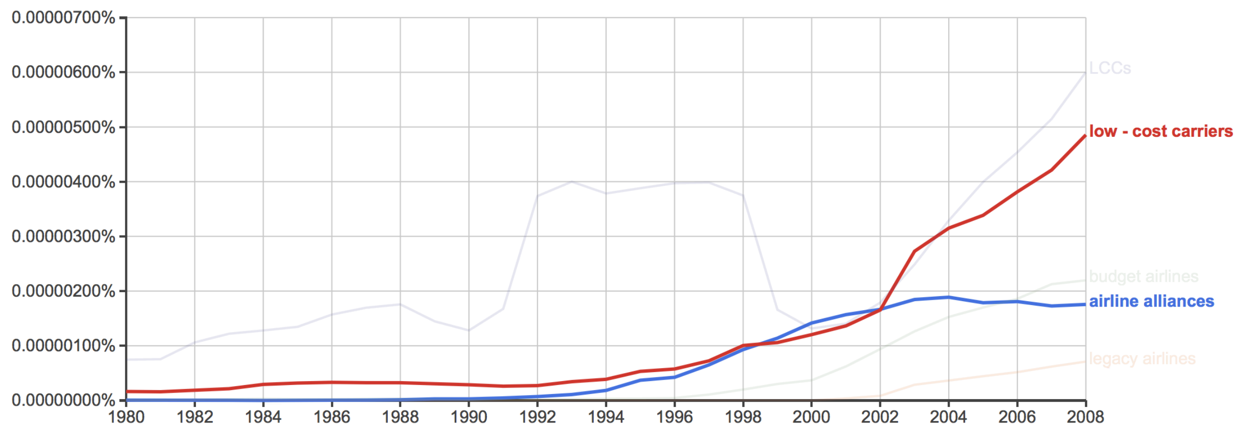

Figure 4: Google Ngram – focused on low-cost carriers and airline alliances

Narrowing in on the terms "airline alliances" and "low-cost carriers" in particular, the Ngram shows how both terms have risen at the relatively same rate until 2002, at which point the discussion of low-cost carriers skyrockets.

Limited literature exists to explain why a spike in the discussion of low-cost carriers occurred in 2002. I argue that the divergence between the discussion of airline alliances and low-cost carriers occurred because of 9/11 and its aftermath. 9/11 was an event that shocked the airline industry, lowering passenger load factor, decreasing revenues, and limiting profitability opportunities for many carriers in the United States. Legacy carriers were no exception, as United Airlines, US Airways, Delta Airlines, and Northwest Airlines all filed for bankruptcy following 9/11.

Low-cost carriers were also affected by 9/11 but to a lesser degree. In fact, as noted by Rhoades:

> "After 9/11, the [low-cost carriers] were the only airlines expanding… the decade following 9/11 was a very good one [for low-cost carriers] in the US. [Low-cost carriers] increased in the size of their fleet, growing their share of passenger traffic from 15.7% in 2000 to 25.7% in 2009" (Rhoades, 2016, p. 205).

A similar story could be told in Europe. The rest of the world did not experience the significant declines following 9/11 as seen in the United States, but the international airline industry suffered as well. Because of the financial struggle following 9/11, Ryanair, the leading European low-cost carrier, was able to purchase aircraft at a discounted rate:

> "In the months and years following 9/11, the growth of air travel stalled, and most airlines were simply fighting to survive. Meanwhile, Ryanair was thriving and placed a massive order of 151 737s from Boeing at unbelievably low prices" (Wendover Productions, 2016a).

The author of this video provides no explanation for why Ryanair was thriving after 9/11, but the fact that Ryanair was thriving provided Ryanair with an incredible opportunity to receive low prices on expensive airplanes.

The fact that low-cost carriers were the only ones expanding following 9/11 may explain the decoupling of the two terms shown in Figure 4. While legacy carriers in the United States were struggling with low passenger enplanements due to a heightened fear of flying and terrorism, low-cost carriers were finding success in the post-9/11 world.

Prior to 9/11, the two terms "airline alliance" and "low-cost carrier" grew together as shown in the Google Ngram because both business models were created around the same time. The main low-cost carriers grew during the 1990s, as did the major airline alliances. There was a massive growth in airline alliances in the 1990s as shown in Figure 1 at the beginning of this thesis.

Table 1 shows the sequence of the formation of major carriers in the United States.

Airline	Type	Year of Inception
Delta Airlines	legacy carrier	1924
United Airlines	legacy carrier	1926
Hawaiian Airlines	legacy carrier	1929
American Airlines	legacy carrier	1930
Alaska Airlines	legacy carrier	1932
Southwest Airlines	low-cost carrier	1967
deregulation in the United States		1978
Spirit Airlines	low-cost carrier	1980
Frontier Airlines	low-cost carrier	1994
Allegiant Air	low-cost carrier	1997
Star Alliance	airline alliance	1997
JetBlue	low-cost carrier	1998
Oneworld	airline alliance	1999
Sky Team	airline alliance	2000

Table 1: Year of Inception for Legacy Carriers, Low-Cost carriers, and Airline Alliances

Legacy carriers typically formed prior to deregulation of the airline industry. Before deregulation, government regulations constrained the business opportunities for airlines, which may not have permitted the most efficient method of operations (Hüschelrath & Müller, 2011, p. 28). Low-cost carriers, on the other hand, developed after deregulation and were able to adopt methods that were more efficient and lowered costs. As shown in Table 1, the low-cost carriers were all formed after deregulation in the United States. The exception to this trend is Southwest Airlines, which began operations in 1967. Excluding Southwest Airlines, the successful low-cost carriers in the United States were all formed after deregulation. In regard to the inception of the airline alliances, it is possible that Oneworld and SkyTeam began as a response to the growth of Star Alliance, but I argue that the strength of low-cost competition is the primary driver of alliance formation.

Legacy carriers may have a difficult time reducing costs because legacy carriers formed prior to deregulation (Hüschelrath & Müller, 2011, p. 28). Before deregulation, government

oversight may have limited the ability for legacy carriers to create an efficient business model. As a result of a complex business model, competing with a low-cost competitor by reducing costs proves to be difficult. Legacy carriers need to collaborate with one another within these international alliances to compete with low-cost carriers.

As evidenced by the Google Ngrams in Figures 3 and 4, low-cost carriers have been fundamental in the discussions of the airline industry, but fewer authors are focusing on the importance of airline alliances as an existing player. I hope to reignite the conversation about alliances because alliances have powerful tools in their arsenals to combat the threat of low-cost carriers.

Understanding the Low-Cost Model

The question of how legacy carriers can compete with low-cost carriers is one that has plagued the minds of airline strategists for years. In one survey, airline strategists found three faults in their initial analyses of low-cost carriers as threats to legacy carriers (Franke, 2003).

First, strategists did not understand that the "low-cost service level is focused, not poor" (Franke, 2003, p. 17). The low-cost carrier model is oriented around operating out of secondary airports to lower the costs of landing fees. For example, Southwest Airlines operates out of Chicago Midway International Airport instead of Chicago O'Hare International Airport, as well as out of Dallas Love Field Airport instead of Dallas-Fort Worth International Airport. The strategists recognize now that the use of these secondary airports can actually be more efficient for passengers because both Chicago Midway and Dallas Love Field are in the hearts of the city centers and enable a shorter commute time for passengers rather than the need to go to the major airports that are typically further away from the city. Europe's situation is slightly different in that Ryanair, for example, operates out of smaller airports that are significantly further from the

city center but have fewer fees. London Luton, for example, is over an hour's drive from the London city center and the Paris Beauvais Airport is also an hour and a half outside of Paris. In this case, low-cost carriers are appealing to a market for tourism focused on low fares and willingness to travel longer distances. In Europe, the use of airports that are outside the city center is a factor that contributes to low fares.

Secondly, the low-cost model attracts passengers who are more price sensitive, but it does not necessarily appeal to business travelers. Legacy carriers should place an emphasis on appealing to business and first-class travelers.

Lastly, low-cost carriers could "enter all local markets that provide enough demand for at least one direct flight with a [Boeing] 737 per day" (Franke, 2003, p. 17). Rather than requiring a large number of flights to operate in a new market to offset costs as usually necessitated by legacy carriers, low-cost carriers can essentially enter any market with one aircraft because the costs to operate this one flight are lower. "The reality is that, for more than 70% of the continental markets, [low-cost carriers] are able to provide 80% of the service quality at less than 50% of the unit cost of [legacy carriers]" (Franke, 2003, p. 17-18).

Understanding the low-cost business model helps legacy carriers determine best practices for competing with low-cost carriers. Alliances enable airlines to share costs and grow revenues. Member airlines can collaborate to generate revenues for every member of the alliance, providing an opportunity for alliances to leave low-cost carriers in the dust.

The Failure of the Carrier within a Carrier Model

One of the ways that legacy carriers attempted to reconcile the competition of low-cost carriers was creating a carrier within a carrier – an airline within an airline.

As a response to the immense success that Southwest Airlines was experiencing, United Airlines attempted to create its own low-cost carrier that operated under the United Airlines name, called Shuttle. The United Shuttle provided lower-cost options for consumers by copying the Southwest Airlines low-cost business model. Shuttle failed, and United Airlines then tried again with TED, which also failed. US Airways attempted the carrier within a carrier with MetroJet, Delta Airlines with Song, and Continental Airlines tried it with Continental Lite.

The hybrid model of adopting a low-cost carrier within a legacy carrier has not proven to be as successful as simply operating the low-cost carrier business model (Rhoades, 2016, p. 205). In *Evolution of International Aviation,* Rhoades studies the carrier within a carrier model and determines several reasons why this business model is not sustainable and ultimately resulted in the downfall of several attempted carriers within a carrier.

First, there is an inherent difference in mindset when attempting a low-cost business model that is contrary to the mindset of the legacy carriers. The entire team of employees must place an emphasis on finding new ways to eliminate costs and giving the best fare to the consumer. There are differences between the business model of legacy carriers and that of low-cost carriers that are difficult to rectify by merely adding a low-cost option.

Second, the employment of cheap labor is one of the factors that contributes to the success of low-cost carriers. However, executives of legacy carriers attempting the carrier within a carrier model cannot discriminate wages within the same company. A ramp agent working for TED will see his/her counterpart at United Airlines across the tarmac and not understand why the two are paid differently for the same work. Wage discrimination would be necessary for the low-cost carrier side of operations, but it would breed distrust between employees and the airline executives.

Third, an additional competitor would arise if the carrier within the carrier is set up as a different entity from that of the legacy carrier. Both carriers will attempt to draw in the same customers, which will ultimately result in customers taken away from the legacy carrier and moving to the lower-cost option. (Rhoades, 2016, p. 318-319).

Air France and Lufthansa have attempted to create their own low-cost carrier stem within their operations - Air France created Transavia and Lufthansa created Eurowings. Both are failing, and they do not appear to have learned from the failure of a carrier within a carrier in the United States (Wendover Productions, 2016a).

The foundation of low-cost carriers revolves around reducing costs. For legacy carriers to compete with low-cost carriers, they too need to reduce costs wherever possible. The primary way to do so is by allying with other carriers to share costs and find new sources of revenue.

Reduce Costs

There is a saying that the best way to become a millionaire in the airline industry is to start with a billion. Since deregulation, airlines have had significant difficulties in turning a consistent profit.

The Status of the Industry and the Necessity for Reduced Costs

To provide analyses on how airlines should cut costs, it is first necessary to discuss the need for cost reduction in a highly volatile industry. I have gathered data from the Bureau of Transportation Statistics on statistics for four major carriers in the United States: American Airlines, Delta Airlines, Southwest Airlines, and United Airlines. Below are graphs depicting the total annual net income from 2000 to 2016.

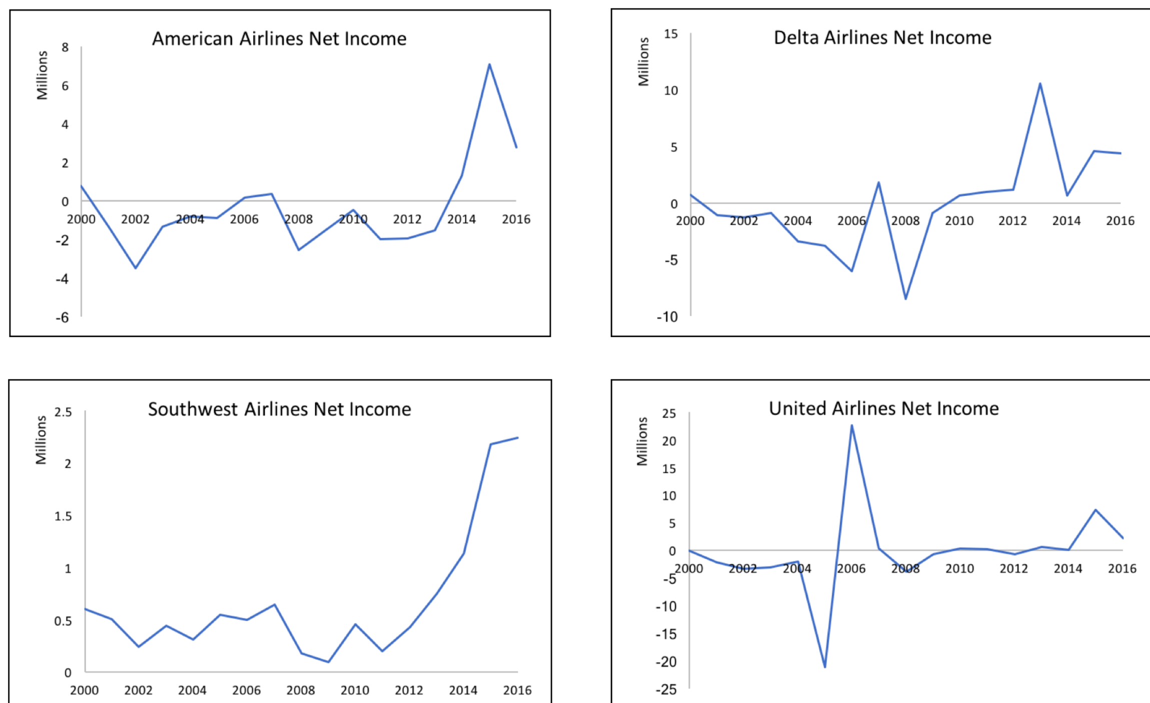

Figure 5: Net Income for American, Delta, Southwest, and United Airlines 2000-2016

Net income in millions of dollars is shown on the y-axis and time is represented on the x-axis. The graphs show the turbulence of the aviation industry associated beyond that experienced by the aircraft.

American, Delta, and United Airlines all fluctuate around a net income of zero for the time period studied. Southwest Airlines, on the other hand, has been profitable with a positive net income for the entire time period studied. In fact, "Southwest Airlines has been profitable every year for 31 years [as of 2003] … During the same period, most of its competitors have struggled to achieve even three or four years of consecutive profitability" (Gittell, 2003, p. 3).

Although the data shown above is only available for 16 years, it does show the status of the airline industry at the moment: it is rare for an airline to find profitability margins for multiple successive years. Airlines are taking drastic measures to cut costs but suffering the penalty of significant losses in the meantime. One of the ways that airlines could reduce these losses is through further integration within an alliance. A greater level of integration provides for more opportunities to share costs, necessitating a greater level of trust between member airlines. Because of the competitive nature of businesses, airlines may find it difficult to ally more closely with other airlines, but the alliance is one of the primary ways to continue to compete with low-cost carriers.

Airlines for America published the bar graph shown in Figure 6 in its industry review. The chart shows the profit margin of several American businesses, and it is worth noting that airlines are operating at a profit margin one-fifth the size of the profit margins of Apple and McDonald's. The profit margin is calculated as the income divided by the sales, presented as a percentage.

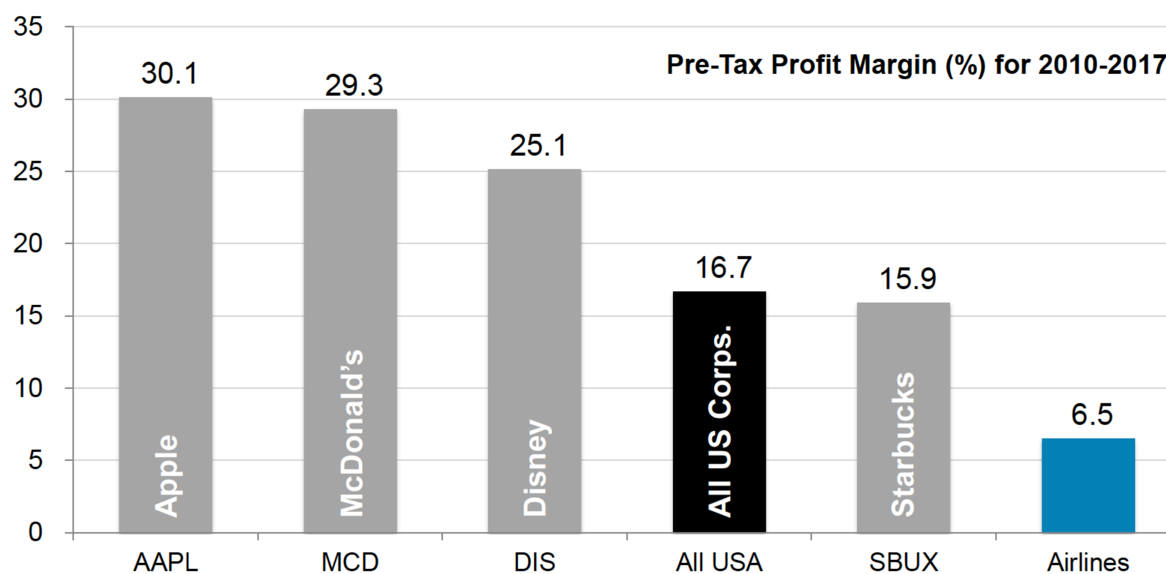

Figure 6: Airlines for America: Profit Margin in the US Business Cycle

The industry has been highly competitive and has made it strikingly difficult for airlines to turn a significant profit. The post-deregulation airline industry is extremely volatile to shocks to the business cycle, as seen in 2001 and 2002 following 9/11 and in 2008 and 2009 following the Global Financial Crisis. In the aftermath of 9/11, United Airlines, US Airways, Delta Airlines, and Northwest Airlines all filed for bankruptcy. American Airlines filed for bankruptcy following the Global Financial Crisis (Rhoades, 2016, p. 210). It takes only one significant crisis to plunge airlines into a state of financial distress.

Further integration of the legacy carriers into alliances may help generate greater revenues, steady net income, and grow profit margins. Because of inconsistent net income and

competition from low-cost carriers, legacy carriers should not shy away from collaboration with other airlines to further the competitive advantage of the alliance.

Is this cycle of cutting costs and losing profits going to change to yield revolutions in the airline industry such that profits can be more sustainable? With the insecurity of the airline market, some airlines may choose to mitigate potential losses and risk by allying with other airlines. These alliances help one another in the face of intense business cycles, fierce competition, and demands from consumers for a higher service quality at a lower cost.

Costs that Airlines Can Mitigate

Airlines incur significant fuel and labor costs. Low-cost carriers have developed a foundation within their business model that mitigates costs related to labor, airport use, and maintenance. Legacy carriers, on the other hand, have a harder time cutting costs due to the nature of a regulated business.

The threat of low-cost carriers, however, has necessitated legacy carriers to find new ways to compete. Alliances help to lower fuel and labor costs and give member airlines access to economies of scale. With economies of scale, alliances can receive steep discounts and spread the costs throughout the member airlines, thereby lowering costs more than if the airline were operating alone.

Table 2 represents data drawn from Airlines for America (Airlines for America, 2017), and illustrates some of the costs that passenger airlines incur as a percent of the airline's operating expenses. The information that I have gathered for this table does not add up to 100% of the operating expenses, as I omitted some of the less prevalent costs for the purpose of this thesis. The remaining 30% of operating expenses are made up of several costs that each only account for about 1% of the operating costs.

Costs as a Percentage of Operating Expenses

airline cost	% of operating expenses
labor	32.5%
fuel	16.9%
professional services	8.6%
aircraft rents/ownership	7.0%
landing fees	2.1%
food & beverage	1.8%
advertising and promotion	0.7%

Table 2: Costs as a Percentage of Operating Expenses

The high costs of airline operations are not unknown to C-suite executives of the major airlines. In searching for reduced costs and the aspiration of turning a profit, the CEO of American Airlines pointed to three factors that should be adjusted to reduce costs (Rhoades, 2016, p. 206-210).

Fuel. The first factor that contributes to high costs for airlines is fuel. Fuel has been a significant area of necessary cost reduction for several years and is consistently one of the costs that airlines find difficult in mitigating, especially with vast changes in fuel prices. Figure 7 below represents the cost of fuel in US dollars per gallon from 1990 to 2017, about 30 years. Significant fluctuation is prevalent, and the massive rise in fuel prices began in 2001 following 9/11. The fuel prices peaked with the financial crisis in 2008. This chart shows that airlines are

vulnerable to even small changes in fuel prices, making the cost of fuel something that is challenging to lower.

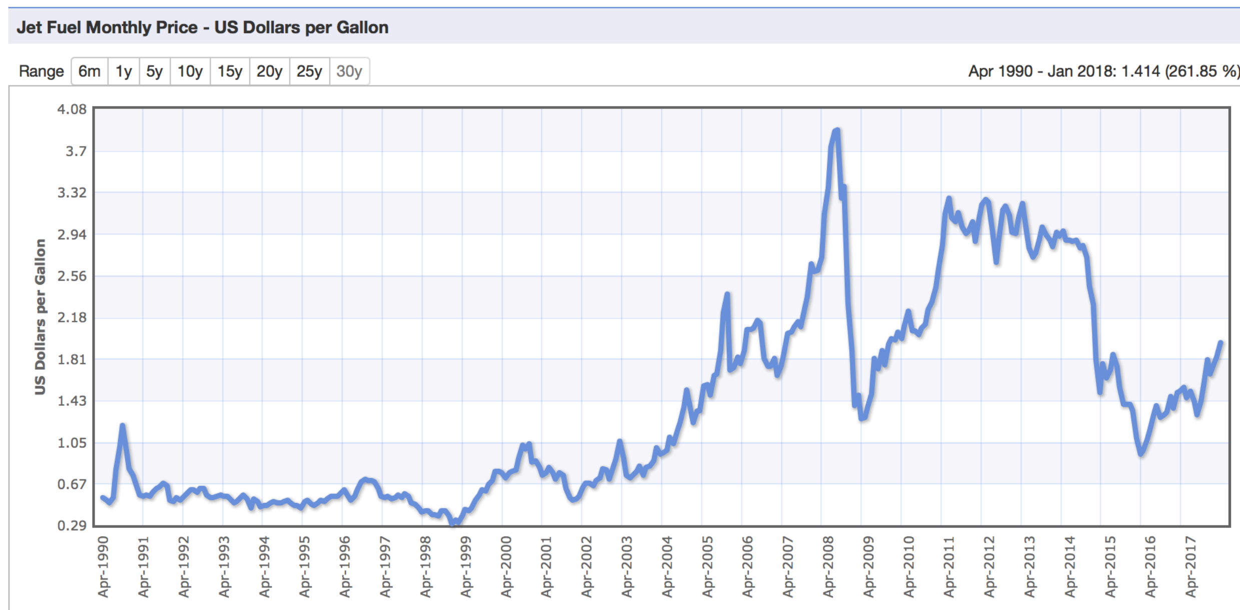

Figure 7: Jet Fuel Monthly Price

Lofty fuel costs and the difficulty of predicting the cost of fuel has driven many legacy carriers to find other ways to cut costs. Airlines have made attempts at lowering the cost of fuel, by hedging fuel costs, for example, but arguably the best way to justify the costs incurred by fuel is by shifting operations to smaller carriers. Alliance formation cultivates an easier environment through which legacy carriers can transfer the service of short-haul routes to regional carriers that are more competitive with low-cost carriers. This transfer of service lowers the cost of fuel to airlines, mitigating the sensitivity to price fluctuations in fuel prices.

To decrease fuel and other operation costs, several legacy carriers have elected to shrink their operations by transferring more short-haul flights to smaller aircraft and to regional carriers. The movement of short-haul flights to smaller, regional carriers has been a trend in the airline industry since 2001, when several carriers filed for bankruptcy. American Airlines, under the

leadership of Don Carty, decided to respond to the threat of low-cost carriers and consumer demand for low fares in part by pulling out of short-haul routes and competing with low-cost carriers through partnerships with smaller, regional carriers (Gittell, 2003, p. 215). American Airlines chose to outsource these short-haul routes to regional carriers to mitigate fuel inefficiency through the use of smaller aircraft. Smaller aircraft like the Bombardier CRJ and the Embraer ERJ are smaller aircraft holding only 50-70 seats and are well-positioned for those shorter routes with less demand. The smaller aircraft are also more fuel-efficient and can lower overall costs for operating a given regional flight.

Similar moves have been made across the airline industry, which gave rise to that carrier within a carrier model discussed earlier. The goal for Continental Airlines and United Airlines in the late 1990s and early 2000s was to create these low-cost carriers within the legacy carrier that would be operating the short-haul routes. As explained in the first section of Chapter 5, the carrier within a carrier model failed and legacy carriers outsourced the operation of short-haul routes to regional subsidiaries. The specialization of regional carriers in short-haul flights generates revenue for the alliance as a whole, leaving legacy carriers the opportunity to focus on international flights, which is discussed in the next section of this chapter. Alliances enable an easier process of outsourcing short-haul routes to regional carriers.

Passenger Service. The second factor concerns distribution, reservation systems and service quality to passengers. “The pressure of low-cost price competition necessitated cuts in airline spending, many in the visible areas of service quality, fare restrictions, meal quality, and so on” (Rhoades, 2016, p. 317).

In order for alliances to continue to compete with low-cost carriers, legacy carriers need to lower ticket prices or create some value that is more appealing to consumers than the low-cost

competition. Slashing fares can be done in a few ways, but the exclusion of in-flight amenities is one of the more prevalent methods. As mentioned before, the no-frills model is a foundation of the low-cost carrier business. The foundation of the legacy carrier customer service is a "frills" model, in which customers receive meals, complimentary snacks, and a pillow and blanket for the long-haul flights. Airlines may choose to reduce both labor and service costs by decreasing the number of flight attendants available while still meeting the requirements set by the Federal Aviation Administration (FAA). Airlines may eliminate several meal services to lower costs or create new fare classes to meet the price-sensitivity of an array of consumers. Domestic travel on the legacy carriers has been dramatically changed and continues to become more and more like the in-flight experience of a low-cost carrier.

The economic principle of monotonicity implies that more is better. Because of price transparency and monotonicity, airlines will not find profit in charging a higher price for the same service as a competitor with a lower price. Prior to the introduction of the internet, passengers would need to call each airline to obtain a price quote, which would take time and energy. Allegiance to one airline would dominate, which would maintain a core consumer base. Now, most passengers fly at the cheapest cost available and do not focus as much on which airline. However, ultra-low-cost carriers like Spirit, Frontier, Ryanair, and EasyJet have all received backlash from their high fees for extra amenities and an uncomfortable in-flight experience. A balance exists between lowering costs and ensuring a positive experience for customers. Without adequate services to keep the passenger happy, he/she will leave in favor of another competitor. Although these low-cost carriers have given passengers incredibly low fares, the low fares can be deceiving because of additional costs to transport baggage or an uncomfortable in-flight experience.

Labor. The third factor contributing to high costs for airlines is labor. As seen in Table 2, labor costs represent about one-third of an airline's operating expenses.

The high cost of labor is largely due to the unionization of the industry. Because labor unions play a key role in the operations of the airline business, airline executives need to ensure that the demands of the labor unions are met, which makes mitigating labor costs more difficult. Alliances can impact these labor costs by sharing personnel. The maintenance department is a great area for airlines to share personnel. For example, Star Alliance can hire a team of five maintenance employees who specialize in the engineering and maintenance of an Airbus A320. All Airbus A320s flown by member airlines of Star Alliance can receive the same maintenance care from this team of five employees, dependent on demand for maintenance. Without the alliance, each individual member airline would hire its own team of maintenance workers. Alliances offer member airlines a way to lower labor costs by sharing personnel.

As discussed by Gittell in *The Southwest Airlines Way*, it is important for airlines to collaborate with labor unions to reach agreements that are profitable for the company. At the end of the day, labor unions exist because of the demand for labor from airlines, and there are opportunities for agreement between the two stakeholders. American Airlines, for example, avoided bankruptcy after 9/11 when several other airlines were going bankrupt because the airline facilitated a collaborative deal with the labor unions that would mitigate labor costs and save the airline from bankruptcy (Rhoades, 2016, p. 210). The story of American Airlines illustrates the need for executives to collaborate with labor unions to reach agreements that help reduce costs, while also ensuring the happiness of employees. The relationship between labor unions and executives provide an interesting insight into the opportunity for airlines to ally, through which airlines can share labor costs. Unions and employees may benefit from more

business operations available by transferring between different airlines, thereby promoting a high pay and a consistent workload.

Because airlines need to reduce costs to continue to compete with low-cost competition, legacy carriers should focus on the areas of cost reduction above. Airlines should work together to disperse operations to different carriers within the alliance to realize the greatest fuel efficiency and lower fuel costs wherever possible. Member airlines should distribute the cost of labor by sharing personnel. Additionally, alliances give access to economies of scale.

Economies of Scale. Rhoades defines several specific economies of scale that are relevant for the aviation industry. The first of these pertains to technological requirements. A large firm can implement more advanced technology compared to another firm that may be smaller. Alliances are like a large firm in this scenario. Managerial economies of scale allow for airlines to share managers and evenly distribute tasks. This may decrease labor costs as well as obtain access to people with differing experience in managerial roles who would collaborate well in teams. Financially, alliances may enable airlines to borrow money at lower rates, rather than borrowing money from other firms. Sharing marketing activities can also decrease costs because the existing cost of advertising will be put to greater use by reaching out to more consumers. Commercially, allying with others may help to obtain special discounts for buying in bulk. Lastly, in terms of research and development, new research and technologies could yield results that affect multiple facets of operations, and thus help the airlines in the alliances in several ways. For example, a company could release an improvement to the existing standard ticketing system, such as going completely paperless. The ticketing process would be cheaper and easier to maintain, thereby decreasing the inventory costs associated with providing the paper for the machine and lowering labor costs associated with repair. All members of the alliance could then

implement the new machine at a lower cost than if the airline were acting individually. The boarding process may also become more streamlined, allowing for aircraft to spend more time in the air.

Although the low-cost competition has a foundation in cost reduction, the typical low-cost competitor does not have access to such a grand scope of economies of scale. Alliances have a valuable opportunity to find areas to reduce costs within these economies of scale and distribute these costs among members. Rather than focusing on lowering fuel costs, alliances should collaborate within these areas of economies of scale to rectify the cost incurred by fuel, giving alliances a competitive advantage over low-cost carriers.

The threat of low-cost competition and the difficulty for legacy carriers to reduce costs drove airline alliance formation. As mentioned earlier in Chapter 5, legacy carriers formed prior to deregulation and had regulatory requirements that inhibited a more efficient, cost-reducing model. Because of the foundation of higher costs, legacy carriers should focus not on lowering costs to the level seen with low-cost carriers but instead further integrate into alliances to exploit economies of scale and collaborate to lower costs as an alliance.

Expand Internationally

Globalization and the Growth of the International Airline Industry

Globalization is defined as the interconnectivity of the world. Globalization has been facilitated by international air travel, with which a passenger can travel from one corner of the world to another in a matter of hours. As the world became more connected and people traveled more often, the airlines needed to adapt to facilitate these intercontinental interactions. This portion of my thesis focuses on the reason for airlines to ally being to respond to globalization and expand their route structures internationally. International expansion gives legacy carriers a competitive advantage over low-cost carriers by supplying a massively growing market with a demand for international travel.

Figures 8 and 9 represent the growth in the number of domestic and international passengers. To create these graphs, I used data from the Bureau of Transportation Statistics for the years 2002-2017. To calculate the number of passengers for the years 2018-2038, I applied the FAA's predicted 1.7% increase in the number of domestic passengers per year and 3.3% increase in the number of international passengers per year. I used the percent change formula to add these percent increases to both domestic and international passenger numbers for every year leading up to 2038.

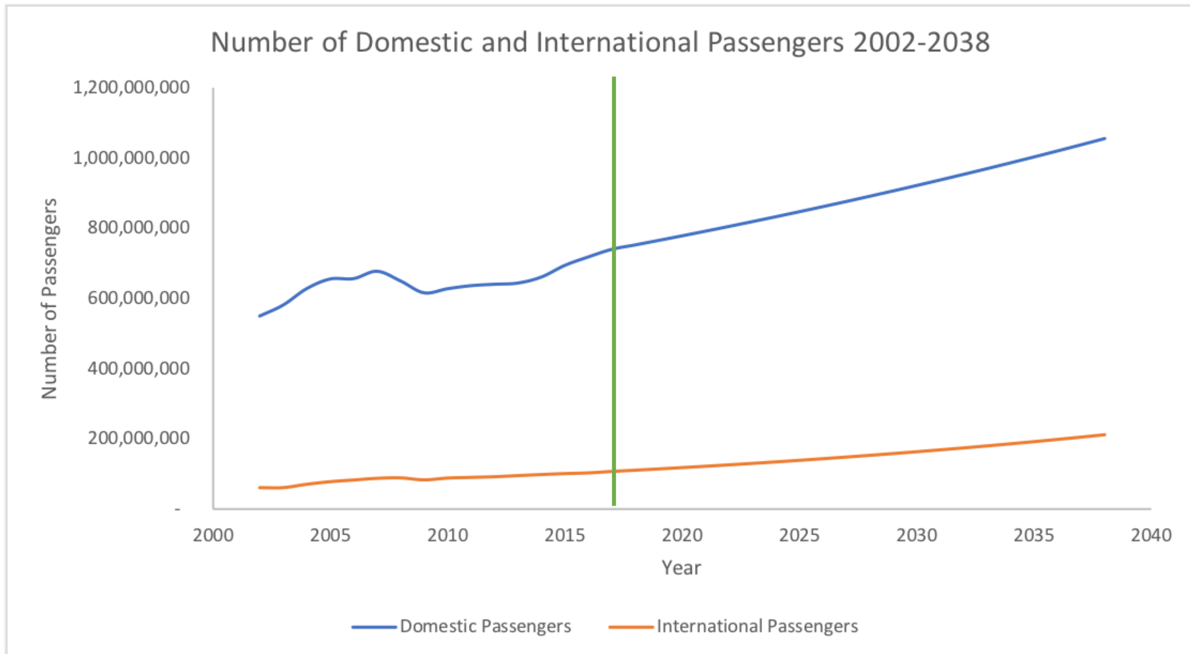

Figure 8: Number of Domestic and International Passengers 2002-2038

Figure 8 shows the total number of passengers on flights operated by American carriers flying both domestically and internationally over a 36-year period. The vertical line is given to represent the year 2017, where the data provided by the Bureau of Transportation Statistics ends and my calculations for projected growth begins. The figure shows that the number of both domestic and international passengers has been increasing since 2011 and will be increasing for the following 27 years. The number of international passengers is predicted to grow at a steeper rate than the number of domestic passengers.

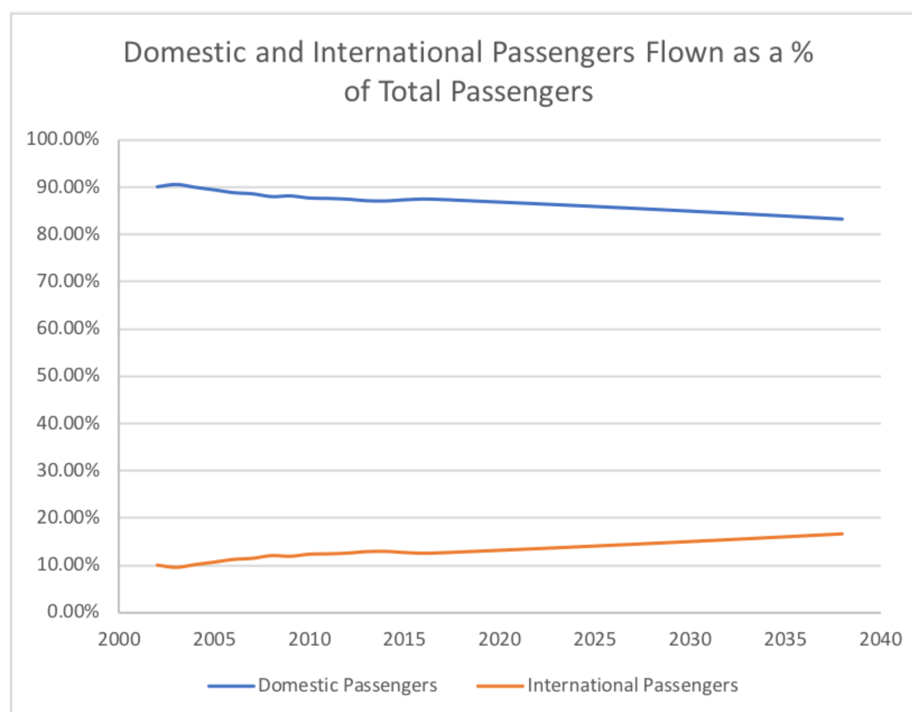

Figure 9: Domestic and International Passengers Flown as a % of Total Passengers

Figure 9 presents the same trend as in Figure 8, indicating that the number of international passengers will increase in the coming years. Figure 9 represents the domestic and international passengers as a percentage of the total number of passengers flying domestically and internationally. The portion of international flights will increase and capture a portion of domestic flights.

Because international travel is predicted to grow, legacy carriers have an opportunity to pursue significant expansion to international markets. In international markets, airlines may be able to find new sources of revenue.

As a result of the Chicago Convention, airlines flying internationally need the approval of the state to fly in sovereign airspace as well as use airport facilities. This portion of my thesis will employ the importance of the development of bilateral agreements and the freedoms of flight for international growth and alliance formation, as mentioned in Chapter 2. Bilateral agreements and the freedoms of flight enable legacy carriers to fly internationally, giving legacy

carriers an opportunity to compete with the threat of low-cost competition. Airlines will ally to enable the expansion of international routes more easily than if done independently.

Structural Adjustments Necessary for International Expansion

As noted in the existing literature, international expansion is one of the drivers for airlines to ally with one another. Before expansion can occur, the structure of the alliance needs to change to adapt to international flights. According to the authors of *Evolution of global airline strategic alliance and consolidation in the twenty-first century*, there are five forces that influence the alliance's ability to operate internationally (Fan, Vigeant-Langlois, Geissler, Bosler, & Wilmking, 2001).

The first of these forces is the rapid globalization seen in the 21st-century economy. As mentioned at the beginning of this section, globalization has necessitated significant adjustments to airline operations to adapt to consumer demand for international growth. The more globalized economy generates a demand for an international flight network and the ability to travel abroad.

The growth of international trade agreements has also necessitated international flights. Examples of trade agreements include the EU and NAFTA, which better connect member states and their citizens. Airlines need to be receptive to these changes in the political and economic sphere by increasing the number of flights that operate between these states. Trade agreements are another example of how the demand for international travel has skyrocketed in recent years, and airlines should meet these demands as opportunities for future growth and profit maximization.

Thirdly, there are some economic incentives that would inspire airline alliance, including greater potential for increased revenues and depleted costs from the sharing of resources, as discussed earlier in Chapter 5.

Liberalization and deregulation in the international airline industry is also an important factor that affects alliance formation. The US deregulated its airline industry in 1978, separating the government from the airlines to allow for the market to stimulate growth. The European Union liberalized its airline industry about 20 years later, permitting European airlines to expand route networks intercontinentally. This is, however, subject to the country of ownership of the carriers operating internationally.

Finally, anti-trust concerns affect the success of airline alliances, particularly in the area of maintaining a competitive market. The US Department of Transportation has been stringent upon ensuring that fair competition remains in the American airline industry by limiting mergers and acquisitions to eliminate the possibility of a monopolistic airline or group of airlines. (Fan et al., 2001).

Legacy Carriers Have the Competitive Advantage in Long-Haul Flights

Although meeting the demand for international travel may contribute to another cost to the airline industry, international expansion offers legacy carriers a significant competitive advantage over low-cost carriers, encouraging these airlines to conduct further alliance formation and integration.

In his article, Pels notes that low-cost carriers have experienced significant success largely because of their development after deregulation, which gave them the ability to choose different markets. Legacy carriers, on the other hand, did not have the capability to simply leave a specific market in favor of another less expensive or more profitable market.

Pels then defines factors that inhibit the likelihood for long-haul flights to be an operation that low-cost carriers assume, including issues with seating density, airport capacity, and turn-around times. For a carrier to operate long-haul flights, seating density needs to be high to cover

costs. A differentiated set of aircraft may be necessary to supply the demand for a low-cost long-haul flight, but the need for multiple types of aircraft contradict the single-aircraft strategy of low-cost carriers. In addition, intercontinental flights typically demand the use of busier airports because some secondary airports that low-cost carriers would normally use may not have the facilities required to operate intercontinental flights. Quick turnaround times for international flights are also more difficult because these flights require more time at the airport to offload passengers and bags, refuel, and reload passengers and bags. As mentioned previously, keeping an aircraft on the ground for a longer period of time limits the amount of money that one aircraft can earn in a single day.

An opportunity for legacy carriers to find new sources of profit arise from a higher willingness to pay for comfort on a long-haul flight. Low-cost carriers, at the foundation, cannot compete with legacy carriers on long-haul flights because of the lack of comfort provided in the plane of a low-cost carrier as well as the low-cost foundation that limits the capability for intercontinental flights. Legacy carriers will continue to have the international advantage over the benefits that low-cost carriers are reaping domestically (Pels, 2008).

Franke asks the same question - are low-cost carriers going to take over the market and beat out legacy carriers? The author argues no because of the advantage legacy carriers have in operating international flights. Legacy carriers will have the advantage of international flights over low-cost carriers because the no-frills business model of low-cost carriers does not facilitate international flights. The no-frills business model is not as highly demanded on international flights because passengers have a higher willingness to pay for amenities and a greater comfort level on international, long-haul flights (Franke, 2003).

According to Shumsky, another way that legacy carriers have decreased costs to compete with low-cost carriers and to focus on international expansion is by outsourcing the shorter routes to regional carriers. As discussed earlier in this chapter, outsourcing short-haul flights to regional carriers is a method for legacy carriers to reduce costs. Legacy carriers can focus more time, money, and power into international routes, where low-cost carriers have a more difficult time operating (Shumsky, 2006, p. 84-85). In this way, airlines are relying more so on the other airlines within the same alliance to generate revenue where revenue may be harder to find.

Load Factor: An Indicator of Revenue from International Expansion

I gathered data from the Bureau of Transportation Statistics on the passenger load factor for American Airlines, Southwest Airlines, Delta Airlines, and United Airlines to test my hypothesis that international expansion is a driver of airline alliances in the face of low-cost competition. The passenger load factor signifies the number of seats filled per flight and is represented as a percent of the number of seats available. Figure 10 shows the average international load factor for these four carriers for the years 2002-2016.

A higher passenger load factor is desirable because a higher number indicates that there are more paying passengers onboard the aircraft, representative of a more profitable flight for the given airline. Barring circumstances related to unforeseen weather or maintenance that may result in flight cancellation, that flight will be going to its final destination. No matter the number of paying passengers on board the flight, the flight operates at the same cost to the airline. All of this is to say that it is more profitable for an airline to fill an aircraft. Without a sufficient number of customers onboard, the flight might be operating at a loss, and this is why load factor is an important indicator of individual airline profitability.

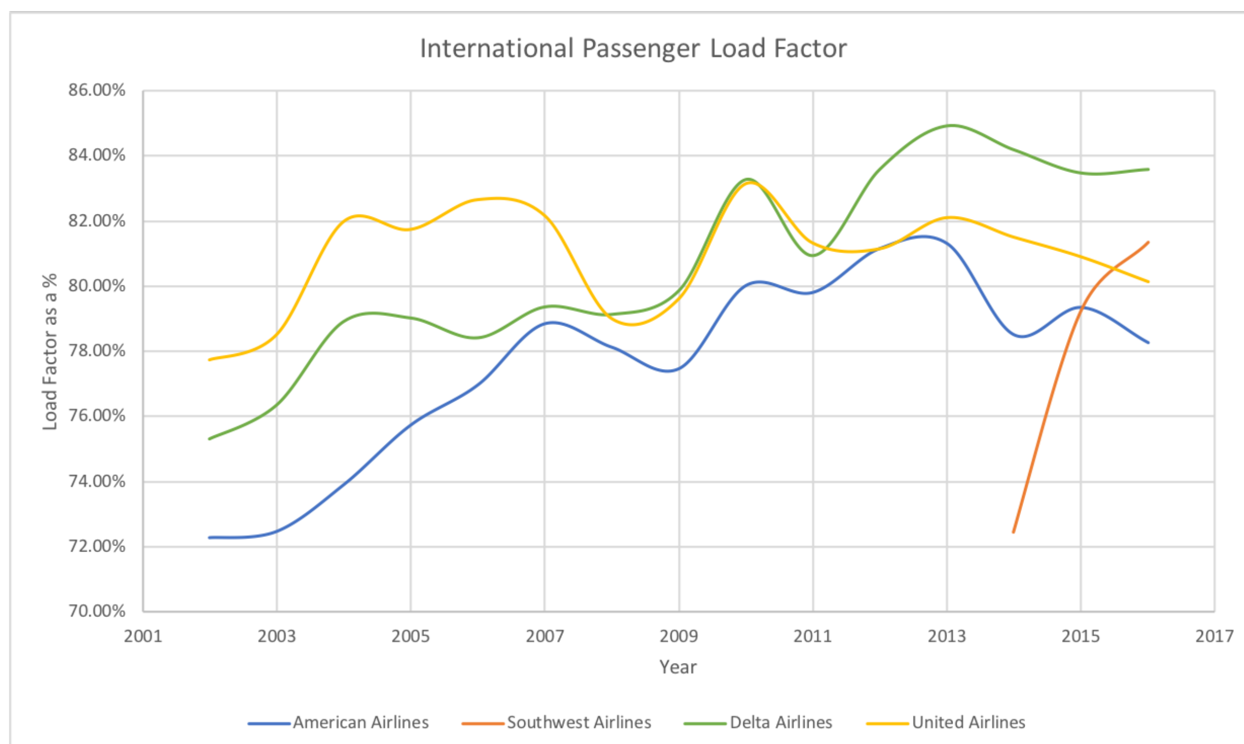

Figure 10: International Passenger Load Factor on American Airlines, Southwest Airlines, Delta Airlines, and United Airlines

Figure 10 shows the passenger load factor for international flights. The line representing Southwest Airlines is shorter because the company did not start operating internationally until 2014. The increase in load factor from 2002 until present reflects enduring globalization and the continued demand for international air travel.

The load factor graph provides data for all international flights, but it is worth noting that while Southwest Airlines is operating internationally, flights that are reaching international destinations are only in Latin America. Southwest has expanded outside of the domestic operations in the United States, but the international flights are still oriented around shorter flight times. Southwest has not yet expanded across the Atlantic or Pacific Oceans, and it is not likely to do so in the near future because of the demand for comfort on overseas flights. Similarly, Ryanair and other low-cost carriers in Europe are technically operating internationally because Europe is composed of many smaller countries. As with Southwest, however, these flights are

still within that shorter time frame, and I do not expect Ryanair to expand intercontinentally in the near future.

International flights are typically much more expensive to operate than domestic flights. Larger aircraft with more amenities and more employees are necessary, while a high load factor is crucial to cover these costs. A higher load factor on international flights is likely a result of fewer international flights available for consumers. Airlines will find an easier time filling seats on international flights because of these fewer options available to consumers. Collaboration among alliance members reduces redundancy in flight options and enables member airlines to make the operation of international flights more efficient, raising load factor for the alliance as a whole.

As discussed earlier, legacy carriers do have an advantage over low-cost carriers in intercontinental flights because of higher service expectations on long-haul flights. The load factor graph shown above depicts the demand for international flights and the profit that can be generated from international expansion. Airline alliances should focus their business on meeting the demands of the international consumer. A focus on international flights will provide legacy carriers, as members of alliances, a competitive advantage over low-cost carriers in a market that low-cost carriers struggle to serve.

Norwegian Air

What about Norwegian Air? Norwegian Air is a vanguard in the industry as a low-cost carrier that has expanded its low-cost operations to intercontinental markets. According to USA Today, Norwegian Air created 25 new routes from American airports to destinations in Europe in 2017 alone. The low-cost carrier is now operating 61 routes from the US to Europe (Mutzabaugh, 2017).

How is this possible? The low-cost business model still applies. Norwegian Air operates out of several secondary airports. London Gatwick Airport is Norwegian Air's hub for intercontinental flights, as opposed to London Heathrow International Airport. There are several additional charges for food, in-flight entertainment (if it exists at all), and bringing baggage along. The comfort level on the flight is lower as a result of limited legroom. The factor that has significantly contributed to the intercontinental operations has been upgrading aircraft to the newest versions. The A321neo, the 737MAX, and the 787 Dreamliner can all operate at the intercontinental level (M.R., 2018).

Norwegian Air is defying the projections for the future of the airline industry by serving a consumer who desires a low-cost, international flight. However, many articles have pointed to the debt that Norwegian Air has accrued over the recent years. By expanding at such a rapid rate, Norwegian Air required a significant increase in the number of aircraft available, resulting in a debt increase of 487% from 2012 to 2017 (Powley, 2018). 2017 was a difficult year for Norwegian Air, posting significant losses and attempting to rectify an aircraft shortage. Analysts point to the rapid growth as the contributor to these losses and raise concern over the future of the airline on its intercontinental routes. Although Norwegian Air is one of the only low-cost carriers operating intercontinentally, the significant losses that arose in 2017 may be an indicator of future failure.

Some may remember the story of a certain low-cost carrier called People Express. Following deregulation in the United States, People Express emerged as a low-cost carrier, offering passengers low fares but supplemented by the cost of additional bag fees and extra fees for service items. In many ways, People Express embodied the traditional low-cost carrier model and pulled paying customers away from the more expensive legacy carriers.

In 1983, People Express launched an international flight, flying from Newark International Airport to London Heathrow International Airport (Airways, 2017). The route was immensely popular, but legacy carriers like American and United Airlines began to match the fare price that People Express was offering. American and United had more flights between these two airports and cut fares on flights to surrounding cities as well to drive out the competition from People Express (Airways, 2017).

People Express went on to acquire Frontier Airlines before it was the Frontier Airlines known today. As mentioned by Airways (2017), People Express had a difficult time integrating Frontier's employees to the "no frills" model of a low-cost carrier. The strength of the competition on international flights, rapid expansion, and a failed integration of Frontier Airlines ultimately led to the downfall of People Express (Airways, 2017). Continental Airlines acquired People Express and Frontier Airlines.

The failure of People Express may indicate an unfortunate future for Norwegian Air. Like Norwegian Air, People Express also expanded quickly and accrued debt that was difficult to cut. Legacy carriers came out to compete with People Express's low intercontinental fares by lowering prices on numerous flights to a variety of destinations. A similar move may occur with the international flights provided by Norwegian Air: legacy carriers may be able to lower their fares for a few years until Norwegian Air is forced to declare bankruptcy.

Do international-reaching alliances still need to be concerned about the threat from Norwegian Air? Alliances should absolutely keep an eye on Norwegian and the consumers seeking a low-fare international option. However, alliances have already established a massive international network that is strong and powerful. To compete with Norwegian Air, legacy carriers can use their connections and resources to increase the number of flights available and

lower fares to consumers, appealing to the international consumer who is looking for a reliable airline to fly internationally. Through collaboration within airline alliances, legacy carriers can drive out low-cost competition on international routes.

Chapter 6: Conclusion

In conclusion, there is significant evidence pointing to the fact that low-cost carriers are a monumental player in driving an airline's decision to ally. The business model of low-cost carriers has impacted the success of alliances by providing a strong source of competition. Low-cost carriers have also recreated the airline market by offering low fares to consumers, which has challenged alliances to adjust business operations to respond to this demand.

In this thesis, I studied how low-cost carriers have impacted the market, the necessity for cost reduction in the face of low-cost competition and price-sensitive consumers, and an opportunity for heavy international expansion as a driver of new revenue. Legacy carriers should continue to integrate further in their alliances to provide new services for consumers and compete with low-cost carriers.

Current Responses to Low-Cost Competition

The competition with Southwest Airlines has encouraged legacy airlines to offer low-fare options. Delta Airlines, for example, implemented a basic economy option in 2015 (FAA, 2018, p. 13) that is intended to compete with the low fares of low-cost carriers. At the basic economy price point, the passenger pays a lower fare but must pay an extra fee to carry on a bag and the passenger is randomly assigned a seat. If the passenger would like to choose his/her seat, he/she must pay an extra fee for the privilege. The basic-economy level, which was implemented by American Airlines in 2017 and by several other legacy carriers in the US, seems to be a follow-up to the attempt at a carrier within a carrier model by serving the cost-sensitive consumer. The attempt at appealing to a more cost-sensitive customer is beneficial for the consumer because the consumer now has more options available in terms of low-cost carriers and choosing to fly a

legacy carrier but at a lower price. In this way, for largely the same price, the consumer can choose between multiple airlines with a diverse set of amenities.

The Future of the Airline Industry

"In the end, the winner of the airline industry reshuffling could be the customer, offered a wider range of business modes at a lower price" (Franke, 2003, p. 19). While the airlines are fighting to stay relevant and competitive, the customer is receiving lower fares and more diversified options.

How can alliances better their chances at success? While alliances are battling the threat of low-cost carriers by decreasing costs and adjusting business plans, it is necessary that alliances ensure their own success.

According to the authors of *Evolution of global airline strategic alliance and consolidation in the twenty-first century,* it is crucial for success that, while the industry is becoming more globalized, the leading carriers continue to expand and further their presence globally, remaining at the forefront of international airline operations (Fan et al., 2001). Legacy carriers should focus on this area for revenue opportunities.

Airlines that are not yet allied or are looking to change alliances need to select an alliance for its "philosophy of alliance operation" (Fan et al., 2001, p. 358), meaning that airlines should not choose an alliance solely based on its reduced costs, for example. Instead, airlines should pair their alliance philosophies with a like-minded alliance. For the success of an alliance and for members, member airlines need to collaborate with one another, trust one another, and promote the revenue-earning potential of one another. Without trust and a collective goal for the bettering of the alliance as a whole, the alliance will not obtain the same level of opportunities as other alliances who do have said collective goal.

Would a low-cost carrier benefit from joining an alliance? This question invites another paper in and of itself. My research has pointed me to believe that low-cost carriers will not join with airline alliances because of the differences in business model between low-cost carriers and legacy carriers. However, the UFLY Alliance was launched in early 2016 as a collaboration of several low-cost carriers in Asia and the first low-cost alliance that the international airline industry has seen (UFLY Alliance, n.d.). Two other low-cost carrier alliances have since formed in the same region: Value Alliance and Vanilla Alliance. All three alliances are located in Asia and appear to be gaining steam in the airline market.

Would such a situation occur in the United States and Europe? Gittell, the author of *The Southwest Airlines Way*, asked Colleen Barrett (the Chief Operating Officer of Southwest Airlines) if Southwest would create agreements with other airlines. Barrett answered no, despite the evidence that alliances can generate greater revenues.

> “We [Southwest Airlines] would prefer to just rely on ourselves and take that growth internally. There are advantages to alliances, but there’s not another airline out there that could communicate with us. There are no airlines that have systems similar to ours. We do not want to hold for other airlines or slow our operations.” (Gittell, 2003, p. 183-184).

This quote from the COO of Southwest Airlines shows that the low-cost carrier would not choose to ally with other airlines, as the business model of Southwest is so different from other airlines that exist in the American airline market.

It is possible that Spirit, Frontier, or other low-cost US airlines might ally with a European low-cost carrier such as Ryanair, but I do not expect such an event to occur in the near future because of the difficulty for low-cost carriers to fly intercontinentally. Spirit and Frontier will likely not ally because they are both major competitors for one another, similar to why Delta

Airlines and American Airlines will not ally with one another in the same alliance. Each airline is a member of its own global alliance that helps the airlines gain a competitive advantage against one another and against low-cost carriers internationally.

Concluding Thoughts

My analysis has shown that the threat of low-cost carriers has driven alliance formation as a way for legacy carriers to reduce costs and expand internationally.

The most significant areas for cost reduction include fuel, labor, and quality of passenger service. The use of newer, more efficient aircraft will reduce fuel costs. Collaboration with labor unions can help to reduce labor costs. Lowering the quality of available service items can lower passenger service costs. The reduction of costs, however, needs to be conducted in moderation because there are still passengers who prefer to fly with amenities that low-cost carriers do not have, and this market is available for legacy carriers to serve.

Even though Norwegian Air and a few other airlines have begun to expand their low-cost operations across continents, I do not see the entire population of travelers transitioning to the low-cost model. There is still some beauty in flying for 8 hours in a comfortable seat with complimentary pillows, blankets, meals, and an impressive lineup of in-flight entertainment.

I predict that the low-cost model is not sustainable as the sole provider of airline services because there remains a significant portion of the population that has a willingness to pay more for a better service on both domestic and international flights, but particularly on those intercontinental flights. While low-cost carriers will continue to attract business from younger generations and business travelers, legacy carriers still have the attraction of name recognition, generally positive standings in society that motivate passenger selection, and a sort of monopoly on international flights.

Low-cost carriers such as Spirit Airlines, Frontier Airlines, Ryanair, and EasyJet are subjects of significant scrutiny by travelers, and I believe that people are choosing to fly with the legacy carriers at the expense of low-cost carriers because of the ultra-low-cost model embodied in some of these carriers.

I do not envision low-cost carriers being driven out by legacy carriers. I do not envision legacy carriers being driven out by low-cost carriers. Both have their roles in the industry and provide important services to consumers of airline travel. Both sides of the industry will continue to compete and continue to innovate to provide lower fares to consumers at lower costs to the airlines as a whole. The competition between the two sides of the polarized industry is to the great benefit of the consumer. As long as consumers continue to challenge legacy carriers and push low-cost carriers for more amenities and services at a lower fare, the airlines will continue to compete to provide the highest service quality at the lowest price.

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