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CASE 7

The Evolution of the Small Package Express Delivery Industry, 1973–2010

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Introduction

The small package express delivery industry is the segment of the broader postal and cargo industries that specializes in rapid (normally 1–3 days) delivery of small packages (small packages are defined as those weighing less than 150 lbs. or having less than 165 inches in combined length and girth). It is generally agreed that the modern express delivery industry in the United States began with Fred Smith's vision for Federal Express Company (now FedEx), which started operations in 1973. FedEx transformed the structure of the existing air cargo industry and paved the way for rapid growth in the overnight package segment of that industry. A further impetus to the industry's development was the 1977 deregulation of the U.S. air cargo industry. This deregulation allowed FedEx (and its emerging competitors) to buy large jets for the first time. The story of the industry during the 1980s was one of rapid growth and new entry. Between 1982 and 1989, small package express cargo shipments by air in the United States grew at an annual average rate of 31%. In contrast, shipments of airfreight and air mail grew at an annual rate of only 2.7%.¹ This rapid growth attracted new entrants such as United Parcel Service (UPS) and Airborne Freight (which operated under the name Airborne Express). The entry of UPS triggered severe price cutting, which ultimately drove some of the weaker competitors out of the market and touched off a wave of consolidation in the industry.

By the mid-1990s, the industry structure had stabilized with four organizations —FedEx, UPS, Airborne Express and the United States Postal Service (USPS)—accounting for the vast majority U.S. express

shipments. During the first half of the 1990s, the small package express industry continued to grow at a healthy rate, with shipments expanding by slightly more than 16% per annum.² Despite this growth, the industry was hit by repeated rounds of price cutting as the three big private firms battled to capture major accounts. In addition to price cutting, the big three also competed vigorously on the basis of technology, service offerings, and the global reach of their operations. By the late-1990s and early-2000s, the intensity of price competition in the industry had moderated, with a degree of pricing discipline being maintained, despite the fact that the growth rate for the industry slowed down. Between 1995 and 2000, the industry had grown at 9.8% per year. In 2001, the volume of express parcels shipped by air fell by 5.9%, partly due to an economic slowdown, and partly due to the aftereffects of the September 11 terrorist attack on the United States.³ Growth picked up again in 2002. Estimates suggest that the global market for small package express delivery should continue to grow by a little over 6% per annum between 2005 and 2025. Most of that growth, however, is forecasted to take place outside of the now mature North American market. Within the United States, the annual growth rate is predicted to match the growth in United States GDP.⁴

In North America, the biggest change to take place in the 2000s was the 2003 entry of DHL with the acquisition of Airborne Express for \$1 billion. DHL is owned by Deutsche Post World Net, formally the German post office, which since privatization has been rapidly transforming itself into a global express mail and logistics operation. Prior to 2003, DHL lacked a strong presence in the all-important

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United States market. The acquisition of Airborne gave DHL a foothold in the United States. DHL subsequently spent \$1.5 billion trying to upgrade Airborne's delivery network in a quest for market share. Despite heavy investments, DHL failed to gain traction and after 5 years of losses, in 2009 it exited the United States market. With the exit of DHL, the United States market looks increasingly like a duopoly. In 2010, FedEx held onto 54% of the \$14 billion overnight express market, UPS accounted for 41% and the USPS held 6% (although they actually contracted out its express deliveries to FedEx). UPS dominated the \$34 billion ground market in 2010, with a 61% share, followed by FedEx with 22% and the USPS with 16%.⁵

The Industry Before FedEx

In 1973, roughly 1.5 billion tons of freight were shipped in the United States. Most of this freight was carried by surface transport, with airfreight accounting for less than 2% of the total.⁶ While shipment by airfreight was often quicker than shipment by surface freight, the high cost of airfreight had kept down demand. The typical users of airfreight at this time were suppliers of time-sensitive, high-priced goods, such as computer parts and medical instruments, which were needed at dispersed locations but which were too expensive for their customers to hold as inventory.

The main cargo carriers in 1973 were major passenger airlines, which operated several all-cargo planes and carried additional cargo in their passenger planes, along with a handful of all-cargo airlines such as Flying Tigers. From 1973 onward, the passenger airlines moved steadily away from all-cargo planes and began to concentrate cargo freight in passenger planes. This change was a response to increases in fuel costs, which made the operation of many older cargo jets uneconomical.

With regard to distribution of cargo to and from airports, in 1973 about 20% of all airfreight was delivered to airports by the shipper and/or picked up by the consignee. The bulk of the remaining 80% was accounted for by three major intermediaries: (1) Air Cargo Incorporated, (2) freight forwarders, and (3) the U.S. Postal Service. Air Cargo Incorporated was a trucking service, wholly owned by 26 airlines, which performed pickup and delivery service for the

airlines' direct customers. Freight forwarders were trucking carriers who consolidated cargo going to the airlines. They purchased cargo space from the airlines and retailed this space in small amounts. They dealt primarily with small customers, providing pickup and delivery services in most cities, either in their own trucks or through contract agents. The U.S. Postal Service used air service for transportation of long-distance letter mail and air parcel post.⁷

The Federal Express Concept

Founded by Fred Smith, Jr., Federal Express was incorporated in 1971 and began operations in 1973. At that time, a significant portion of small-package airfreight flew on commercial passenger flights. Smith believed that there were major differences between packages and passengers, and he was convinced that the two had to be treated differently. Most passengers moved between major cities and wanted the convenience of daytime flights. Cargo shippers preferred nighttime service to coincide with late-afternoon pickups and next-day delivery. Because small-package airfreight was subservient to the requirements of passengers' flight schedules, it was often difficult for the major airlines to achieve next-day delivery of airfreight.

Smith's aim was to build a system that could achieve next-day delivery of small-package airfreight (less than 70 lbs.). He set up Federal Express with his \$8 million family inheritance and \$90 million in venture capital (the company's name was changed to FedEx in 1998). Federal Express established a hub-and-spoke route system, the first airline to do so. The hub of the system was Memphis, chosen for its good weather conditions, central location, and the fact that it was Smith's hometown. The spokes were regular routes between Memphis and shipping facilities at public airports in the cities serviced by Federal Express. Every weeknight, aircraft would leave their home cities with a load of packages and fly down the spokes to Memphis (often with one or two stops on the way). At Memphis, all packages were unloaded, sorted by destination, and reloaded. The aircraft then returned back to their home cities in the early hours of the morning. Packages were ferried to and from airports by Federal Express couriers driving the company's vans and working to a tight schedule. Thus, from door to door, the package was in Federal Express' hands. This system guaranteed

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that a package picked up from a customer in New York at 5 p.m. would reach its final destination in Los Angeles (or any other major city) by noon the following day. It enabled Federal Express to realize economies in sorting and to utilize its air cargo capacity efficiently. Federal Express also pioneered the use of standard packaging with an upper weight limit of 70 lbs. and a maximum length plus girth of 108 inches. This standard helped Federal Express to gain further efficiencies from mechanized sorting at its Memphis hub. Later entrants into the industry copied Federal Express' package standards and hub-and-spoke operating system.

To accomplish overnight delivery, Federal Express had to operate its own planes. Restrictive regulations enforced by the Civil Aeronautics Board (CAB), however, prohibited the company from buying large jet aircraft. To get around this restriction, Federal Express bought a fleet of twin-engine executive jets, which it converted to mini-freighters. These planes had a cargo capacity of 6,200 lbs., which enabled Federal Express to get a license as an air-taxi operator.

After 1973, Federal Express quickly built up volume. By 1976, it had an average daily volume of 19,000 packages, a fleet of 32 aircraft, 500 delivery vans, and 2,000 employees, and it had initiated service in 75 cities. After 3 years of posting losses, the company turned in a profit of \$3.7 million on revenues of \$75 million.⁸ However, volume had grown so much that Federal Express desperately needed to use larger planes to maintain operating efficiencies. As a result, Smith's voice was added to those calling for Congress to deregulate the airline industry and allow greater competition.

Deregulation And Its Aftermath

In November 1977, Congress relaxed regulations controlling competition in the air cargo industry, one year before passenger services were deregulated. This involved a drastic loosening of standards for entry into the industry. The old CAB authority of naming the carriers that could operate on the various routes was changed to the relatively simple authority of deciding which candidate carriers was fit, willing, and able to operate an all-cargo route. In addition, CAB controls over pricing were significantly reduced. The immediate effect was an increase in rates for shipments, particularly minimum- and high-weight

categories, suggesting that prices had been held artificially low by regulation. As a result, the average yield (revenue per ton-mile) on domestic airfreight increased 10.6% in 1978 and 11.3% in 1979.⁹

Freed from the constraints of regulation, Federal Express immediately began to purchase larger jets and quickly established itself as a major carrier of small-package airfreight. Despite the increase in yields, however, new entry into the air cargo industry was limited, at least initially. This was mainly due to the high capital requirements involved in establishing an all-cargo carrier. Indeed, by the end of 1978, there were only 4 major all-cargo carriers serving the domestic market: Airlift International, Federal Express, Flying Tigers, and Seaboard World Airlines. While all of these all-cargo carriers had increased their route structure following deregulation, only Federal Express specialized in next-day delivery for small packages. Demand for a next-day delivery service continued to boom. Industry estimates suggest that the small-package priority market had grown to about 82 million pieces in 1979, up from 43 million in 1974.¹⁰

At the same time, in response to increasing competition from the all-cargo carriers, the passenger airlines continued their retreat from the all-cargo business (originally begun in 1973 as a response to high fuel prices). Between 1973 and 1978, there was a 45% decline in the mileage of all-cargo flights by the airlines. This decrease was followed by a 14% decline between 1978 and 1979. Instead of all-cargo flights, the airlines concentrated their attentions on carrying cargo in passenger flights. This practice hurt the freight forwarders badly. The freight forwarders had long relied on the all-cargo flights of major airlines to achieve next-day delivery. Now the freight forwarders were being squeezed out of this segment by a lack of available lift at the time needed to ensure next-day delivery.

This problem led to one of the major post-deregulation developments in the industry: the acquisition and operation by freight forwarders of their own fleets of aircraft. Between 1979 and 1981, 5 of the 6 largest freight forwarders became involved in this activity. The two largest were Emery Worldwide and Airborne Express. Emery operated a fleet of 66 aircraft at the end of 1979, the majority of which were leased from other carriers. In mid-1980, this fleet was providing service to approximately 129 cities, carrying both large-volume shipments and small-package express.

Airborne Express acquired its own fleet of aircraft in April 1980 with the purchase of Midwest Express, an Ohio-based all-cargo airline. In 1981, Airborne opened a new hub in Ohio, which became the center of its small-package express operation. This enabled Airborne to provide next-day delivery for small packages to 125 cities in the United States.¹¹ Other freight forwarders that moved into the overnight mail market included Purolator Courier and Gelco Courier, and both offered overnight delivery by air on a limited geographic scale.

Industry Evolution, 1980–1986

New Products and Industry Growth

In 1981, Federal Express expanded its role in the overnight market with the introduction of an overnight letter service, with a limit of two ounces. This guaranteed overnight delivery service was set up in direct competition with the USPS's Priority Mail. The demand for such a service was illustrated by its expansion to about 17,000 letters per day within its first 3 months of operation.

More generally, the focus of the air express industry was changing from being predominantly a conduit for goods to being a distributor of information—particularly company documents, letters, contracts, drawings, and the like. As a result of the growth in demand for information distribution, new product offerings such as the overnight letter, and Federal Express' own marketing efforts, the air express industry enjoyed high growth during the early-1980s, averaging more than 30% per year.¹² Indeed, many observers attribute most of the growth in the overnight delivery business at this time to Federal Express' marketing efforts. According to one industry participant, "Federal Express pulled off one of the greatest marketing scams in the industry by making people believe they absolutely, positively, had to have something right away."¹³

Increasing Price Competition

Despite rapid growth in demand, competitive intensity in the industry increased sharply in 1982 following the entry of UPS into the overnight-delivery market. UPS was already by far the largest private package transporter in the United States, with an

enormous ground-oriented distribution network and revenues in excess of \$4 billion per year. In addition, for a long time, UPS had offered a second-day air service for priority packages, primarily by using the planes of all-cargo and passenger airlines. In 1982, UPS acquired a fleet of 24 used Boeing 727–100s and added four DC-8 freighters from Flying Tigers. These purchases allowed UPS to introduce next-day air service in September 1982—at roughly half the price Federal Express was charging.¹⁴

Federal Express countered almost immediately by announcing that it would institute 10:30 a.m. priority overnight delivery (at a cost to the company of \$18 million). None of the other carriers followed suit, however, reasoning that most of their customers are usually busy or in meetings during the morning hours, so delivery before noon was not really that important. Instead, by March 1983, most of the major carriers in the market (including Federal Express) were offering their high-volume customers contract rates that matched the UPS price structure. Then, three new services introduced by Purolator, Emery, and Gelco Courier pushed prices even lower. A competitive free-for-all followed, with constant price changes and volume discounts being offered by all industry participants. These developments hit the profit margins of the express carriers. Between 1983 and 1984, Federal Express saw its average revenue per package fall nearly 14%, while Emery saw a 15% decline in its yield on small shipments.¹⁵

Beginning around this time, customers began to group together and negotiate for lower prices. For example, Xerox set up accounts with Purolator and Emery that covered not only Xerox's express packages but also those of 50 other companies, including Mayflower Corp., the moving company, and the Chicago Board of Trade. By negotiating as a group, these companies could achieve prices as much as 60% lower than those they could get on their own.¹⁶

The main beneficiary of the price war was UPS, which by 1985 had gained the number 2 spot in the industry, with 15% of the market. Federal Express, meanwhile, had seen its market share slip to 37% from about 45% two years earlier. The other 4 major players in the industry at this time were Emery Air Freight (14% of market share), Purolator (10% of market share), Airborne Express (8% of market share), and the U.S. Postal Service (8% of market share).¹⁷ The survival of all four of these carriers in

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the air express business was in question by 1986. Emery, Purolator, and the U.S. Postal Service were all reporting losses on their air express business, while Airborne had seen its profits slump 66% in the first quarter of 1986 and now had razor-thin margins.

Industry Evolution, 1987–1996

Industry Consolidation

A slowdown in the growth rate of the air express business due to increasing geographic saturation and inroads made by electronic transmission (primarily fax machines) stimulated further price discounting in 1987 and early-1988. Predictably, this discounting created problems for the weakest companies in the industry. The first to go was Purolator Courier, which had lost \$65 million during 1985 and 1986. Purolator's problems stemmed from a failure to install an adequate computer system. The company was unable to track shipments, a crucial asset in this industry, and some of Purolator's best corporate customers were billed 120 days late.¹⁸ In 1987, Purolator agreed to be acquired by Emery. Emery was unable to effect a satisfactory integration of Purolator, and it sustained large losses in 1988 and early-1989.

Consolidated Freightways was a major trucking company and parent of CF Air Freight, the third largest heavy shipment specialist in the United States. In April 1989, Consolidated Freightways acquired Emery for \$478 million. However, its shipment specialist, CF Air Freight, soon found itself struggling to cope with Emery's problems. In its first 11 months with CF, Emery lost \$100 million. One of the main problems was Emery's billing and tracking system, described as a "rat's nest" of conflicting tariff schedules, which caused overbilling of customers and made tracking packages en route a major chore. In addition, CF enraged corporate customers by trying to add a "fuel surcharge" of 4–7% to prices in early-1989. Competitors held the line on prices and picked up business from CF/Emery.¹⁹

As a result of the decline of the CF/Emery/Purolator combination, the other firms in the industry were able to pick up market share. By 1994, industry estimates suggested that Federal Express accounted for 35% of domestic airfreight and air express industry revenues, UPS had 26%, Airborne Express was third with 9%, and Emery and the U.S.

Postal Service each held onto 4% of the market. The remainder of the market was split among numerous small cargo carriers and several combination carriers, such as Evergreen International and Atlas Air. (Combination carriers specialize mostly in heavy freight, but do carry some express mail.)²⁰

The other major acquisition in the industry during this time was the purchase of Flying Tigers by Federal Express for \$880 million in December 1988. Although Flying Tigers had some air express operations in the United States, its primary strength was as a heavy cargo carrier with a global route structure. The acquisition was part of Federal Express' goal of becoming a major player in the international air express market. However, the acquisition had its problems. Many of Flying Tigers' biggest customers, including UPS and Airborne Express, were Federal Express' competitors in the domestic market. These companies had long paid Flying Tigers to carry packages to those countries where they had no landing rights. It seemed unlikely that these companies would continue to give international business to their biggest domestic competitor. Additional problems arose in the process of trying to integrate the two operations. These problems included the scheduling of aircraft and pilots, the servicing of Flying Tigers' fleet, and the merging of Federal's nonunionized pilots with Flying Tigers' unionized pilots.²¹

During the late-1980s and early-1990s, there were also hints of further consolidations. TNT Ltd., a large Australian-based air cargo operation with a global network, made an unsuccessful attempt to acquire Airborne Express in 1986. TNT's bid was frustrated by opposition from Airborne and by the difficulties inherent in getting around U.S. law, which limited foreign firms from having more than a 25% stake in U.S. airlines. In addition, DHL Airways, the U.S. subsidiary of DHL International, was reportedly attempting to enlarge its presence in the United States and was on the lookout for an acquisition.²²

Pricing Trends

In October 1988, UPS offered new discounts to high-volume customers in domestic markets. For the first time since 1983, competitors declined to match the cuts. Then, in January 1989, UPS announced a price increase of 5% for next-day air service, its first price increase in nearly 6 years. Federal Express, Airborne, and Consolidated Freightways all followed suit with

moderate increases. UPS announced additional rate increases of 5.9% on next-day air letters in February 1990. Federal Express followed suit in April, and Airborne also implemented selective price hikes on noncontract business of 5%, or \$0.50 per package on packages up to 20 lbs.

Just as prices were stabilizing, however, the 1990–1991 recession came along. For the first time in the history of the U.S. air express industry, there was a decline in year-on-year shipments, with express freight falling from 4,455 million ton-miles in 1989 to 4,403 million ton-miles in 1990. This decline triggered another round of competitive price cuts and yields plummeted. Although demand strongly rebounded, repeated attempts to raise prices in 1992, 1993, and 1994 simply did not stick.²³

Much of the price cutting was focused on large corporate accounts, which by this time accounted for 75% by volume of express mail shipments. For example, as a result of deep price discounting in 1994, UPS was able to lure home shopping programmer QVC and computer mail-order company Gateway 2000 away from Federal Express. At about the same time, however, Federal Express used discounting to capture retailer Williams-Sonoma away from UPS.²⁴ This prolonged period of price discounting depressed profit margins and contributed to losses at all three major carriers during the early-1990s. Bolstered by a strong economy, prices finally began to stabilize during late-1995, when price increases announced by UPS were followed by similar announcements at Federal Express and Airborne.²⁵

Product Trends

Second-Day Delivery Having seen a slowdown in the growth rate of the next-day document delivery business during the early-1990s, the major operators in the air express business began to look for new product opportunities to sustain their growth and margins. One trend was a move into the second-day delivery market, or deferred services, as it is called in the industry. Airborne Express started the move toward second-day delivery in 1991, and that was soon imitated by its major competitors. Second-day delivery commands a substantially lower price point than next-day delivery. In 1994, Federal Express made an average of \$9.23 on second-day deliveries, compared to \$16.37 on priority overnight service. The express mail operators saw deferred services as a

way to utilize excess capacity at the margin, thereby boosting revenues and profits. Since many second-day packages could be shipped on the ground, the cost of second-day delivery could more than compensate for the lower price.

In some ways, however, the service has been almost too successful. During the mid-1990s, the growth rate for deferred services was significantly higher than for priority overnight mail because many corporations came to the realization that they could live with a second-day service. At Airborne Express, for example, second-day delivery accounted for 42% of total volume in 1996, up from 37% in 1995.²⁶

Premium Services Another development was a move toward a premium service. In 1994, UPS introduced its Early AM service, which guaranteed delivery of packages and letters by 8:30 a.m. in select cities. UPS tailored Early AM toward a range of businesses that needed documents or materials before the start of the business day, including hospitals, which expect to use the service to ship critical drugs and medical devices; architects, who need to have their blueprint sent to a construction site; and salespeople. Although demand for the service is predicted to be light, the premium price makes for high profit margins. In 1994, UPS' price for a letter delivered at 10:30 a.m. was \$10.75, while it charged \$40 for an equivalent Early AM delivery. UPS believed that it could provide the service at little extra cost because most of its planes arrived in their destination cities by 7:30 a.m. Federal Express and Airborne initially declined to follow UPS' lead.²⁷

Logistics Services Another development of some note was the move by all major operators into third-party logistics services. Since the latter half of the 1980s, more and more companies have been relying on air express operations as part of their just-in-time inventory control systems. As a result, the content of packages carried by air express operators has been moving away from letters and documents and toward high-value, low-weight products. By 1994, less than 20% of Federal Express' revenues came from documents.²⁸ To take advantage of this trend, all of the major operators have been moving into logistics services designed to assist business customers in their warehousing, distribution, and assembly operations. The emphasis of this business is on helping their

customers reduce the time involved in their production cycles and gain distribution efficiencies.

In the late-1980s, Federal Express set up a Business Logistics Services (BLS) division. The new division evolved from Federal Express' Parts Bank. The Parts Bank stores critical inventory for clients, who are mostly based in the high-tech electronics and medical industries. On request, Federal Express ships this inventory to its client's customers. The service saves clients from having to invest in their own distribution systems. It also allows their clients to achieve economies of scale by making large production runs and then storing the inventory at the Parts Bank.

The BLS division has expanded this service to include some assembly operations and customs brokerage and to assist in achieving just-in-time manufacturing. Thus, for example, one U.S. computer company relies on BLS to deliver electronic subassemblies from the Far East as a key part of its just-in-time system. Federal Express brings the products to the United States on its aircraft, clears them through customs with the help of a broker, and manages truck transportation to the customer's dock.

UPS moved into the logistics business in 1993 when it established UPS Worldwide Logistics, which it positioned as a third-party provider of global supply chain management solutions, including transportation management, warehouse operations, inventory management, documentation for import and export, network optimization, and reverse logistics. UPS based its logistics business at its Louisville, Kentucky, hub. In 1995, the company announced that it would invest \$75 million to expand the scope of this facility, bringing total employment in the facility to 2,200 by the end of 1998.²⁹

Airborne Express also made a significant push into this business. Several of Airborne's corporate accounts utilized a warehousing service called Stock Exchange. As with Federal Express' Parts Bank, clients warehouse critical inventory at Airborne's hub in Wilmington, Ohio, and then ship those items on request to their customers. In addition, Airborne set up a commerce park on 1,000 acres around its Wilmington hub. The park was geared toward companies that wanted to outsource logistics to Airborne and could gain special advantages by locating at the company's hub. The ability to make shipping decisions as late as 2 a.m. Eastern time was one of these advantages.

Information Systems

Since the late-1980s, the major U.S. air express carriers have devoted more and more attention to competing on the basis of information technology. The ability to track a package as it moves through an operator's delivery network has always been an important aspect of competition in an industry where reliability is so highly valued. Thus, all the major players in the industry have heavily invested in barcode technology, scanners, and computerized tracking systems. UPS, Federal Express, and Airborne have also all invested in Internet-based technology that allows customers to schedule pickups, print shipping labels, and track deliveries online.

Globalization

Perhaps the most important development for the long-run future of the industry has been the increasing globalization of the airfreight industry. The combination of a healthy U.S. economy, strong and expanding East Asian economies, and the move toward closer economic integration in Western Europe all offer opportunities for growth in the international air cargo business. The increasing globalization of companies in a whole range of industries from electronics to autos, and from fast food to clothing, is beginning to dictate that the air express operators follow suit.

Global manufacturers want to keep inventories at a minimum and deliver just-in-time as a way of keeping down costs and fine-tuning production—which requires speedy supply routes. Thus, some electronics companies will manufacture key components in one location, ship them by air to another for final assembly, and then deliver them by air to a third location for sale. This setup is particularly convenient for industries producing small high-value items (for example, electronics, medical equipment, and computer software) that can be economically transported by air and for whom just-in-time inventory systems are crucial for keeping down costs. It is also true in the fashion industry, where timing is crucial. For example, the clothing chain The Limited manufactures clothes in Hong Kong and then ships them by air to the United States to keep from missing out on fashion trends.³⁰ In addition, an increasing number of wholesalers are beginning to turn to international air express as a way of meeting delivery deadlines.

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moderate increases. UPS announced additional rate increases of 5.9% on next-day air letters in February 1990. Federal Express followed suit in April, and Airborne also implemented selective price hikes on noncontract business of 5%, or \$0.50 per package on packages up to 20 lbs.

Just as prices were stabilizing, however, the 1990-1991 recession came along. For the first time in the history of the U.S. air express industry, there was a decline in year-on-year shipments, with express freight falling from 4,455 million ton-miles in 1989 to 4,403 million ton-miles in 1990. This decline triggered another round of competitive price cuts and yields plummeted. Although demand strongly rebounded, repeated attempts to raise prices in 1992, 1993, and 1994 simply did not stick.²³

Much of the price cutting was focused on large corporate accounts, which by this time accounted for 75% by volume of express mail shipments. For example, as a result of deep price discounting in 1994, UPS was able to lure home shopping programmer QVC and computer mail-order company Gateway 2000 away from Federal Express. At about the same time, however, Federal Express used discounting to capture retailer Williams-Sonoma away from UPS.²⁴ This prolonged period of price discounting depressed profit margins and contributed to losses at all three major carriers during the early-1990s. Bolstered by a strong economy, prices finally began to stabilize during late-1995, when price increases announced by UPS were followed by similar announcements at Federal Express and Airborne.²⁵

Product Trends

Second-Day Delivery Having seen a slowdown in the growth rate of the next-day document delivery business during the early-1990s, the major operators in the air express business began to look for new product opportunities to sustain their growth and margins. One trend was a move into the second-day delivery market, or deferred services, as it is called in the industry. Airborne Express started the move toward second-day delivery in 1991, and that was soon imitated by its major competitors. Second-day delivery commands a substantially lower price point than next-day delivery. In 1994, Federal Express made an average of \$9.23 on second-day deliveries, compared to \$16.37 on priority overnight service. The express mail operators saw deferred services as a

way to utilize excess capacity at the margin, boosting revenues and profits. Since many second-day packages could be shipped on the ground, the cost of second-day delivery could more than compensate for the lower price.

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ment of contracts, confidential papers, computer printouts, and other documents that are too confidential for Internet transmission or that require real signatures. Major U.S. corporations are increasingly demanding the same kind of service that they receive from air express operators within the United States for their far-flung global operations.

As a consequence of these trends, rapid growth is predicted in the global arena. According to forecasts, the market for international air express is expected to grow at approximately 18% annually from 1996 to 2016.³¹ Faced with an increasingly mature market at home, the race is on among the major air cargo operators to build global air and ground transportation networks that will enable them to deliver goods and documents between any two points on the globe within 48 hours.

The company with the most extensive international operations by the mid-1990s was DHL. In 1995, DHL enjoyed a 44% share of the worldwide market for international air express services (see Exhibit 1).³² Started in California in 1969 and now based in Brussels, DHL is smaller than many of its rivals, but it has managed to capture as much as an 80% share in some markets, such as documents leaving Japan, by concentrating solely on international air express. The strength of DHL was enhanced in mid-1992 when Lufthansa, Japan Airlines, and the Japanese trading company Nissho Iwai announced that they intended to invest as much as \$500 million for a 57.5% stake in DHL. Although Lufthansa and

haulers in the world, both because they carry cargo in the holds of their passenger flights, and because they each have a fleet of all-cargo aircraft.³³

TNT Ltd., a \$6 billion Australian conglomerate, is another big player in the international air express market, with courier services from 184 countries as well as package express and mail services. In 1995, its share of the international air express market was 12%, down from 18% in 1990.³⁴

Among U.S. carriers, Federal Express was first in the race to build a global air express network. Between 1984 and 1989, Federal Express purchased 17 other companies worldwide in an attempt to build its global distribution capabilities, culminating in the \$880 million purchase of Flying Tigers. The main asset of Flying Tigers was not so much its aircraft, but its landing rights overseas. The Flying Tigers acquisition gave Federal Express service to 103 countries, a combined fleet of 328 aircraft, and revenues of \$5.2 billion in fiscal year 1989.³⁵

However, Federal Express has had to suffer through years of losses in its international operations. Start-up costs were heavy, due in part to the enormous capital investments required to build an integrated air and ground network worldwide. Between 1985 and 1992, Federal Express spent \$2.5 billion to build an international presence. Faced also with heavy competition, Federal Express found it difficult to generate the international volume required to fly its planes above the break-even point on many international routes. Because the demand for outbound service from the United States is greater than the demand for inbound service, planes that left New York full often returned half empty.

Trade barriers have also proved very damaging to the bottom line. Customs regulations require a great deal of expensive and time-consuming labor, such as checking paperwork and rating package contents for duties. These regulations obviously inhibit the ability of international air cargo carriers to effect express delivery. Federal Express has been particularly irritated by Japanese requirements that each inbound envelope be opened and searched for pornography, a practice that seems designed to slow down the company's growth rate in the Japanese market.

Federal Express has also found it extremely difficult to get landing rights in many markets. For

Exhibit 1 International Air Express Market Shares, 1995

Company	Market Share
DHL International	44%
Federal Express	21%
UPS	12%
TNT	12%
Others	11%

Source: Standard & Poor's, "Aerospace and Air Transport," *Industry Survey*, February 1996.

The emergence of integrated global corporations is also increasing the demand for the global shipment of contracts, confidential papers, computer printouts, and other documents that are too confidential for Internet transmission or that require real signatures. Major U.S. corporations are increasingly demanding the same kind of service that they receive from air express operators within the United States for their far-flung global operations.

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Japan Airlines are primarily known for their passenger flights, they are also among the top five airfreight haulers in the world, both because they carry cargo in the holds of their passenger flights, and because they each have a fleet of all-cargo aircraft.³³

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example, it took 3 years to get permission from Japan to make 4 flights per week from Memphis to Tokyo, a key link in the overseas system. Then, in 1988, just 3 days before the service was due to begin, the Japanese notified Federal Express that no packages weighing more than 70 lbs. could pass through Tokyo. To make matters worse, until 1995 Japan limited Federal Express' ability to fly on from Tokyo and Osaka to other locations in Asia. The Japanese claimed, with some justification, that due to government regulations, the U.S. air traffic market is difficult for foreign carriers to enter, so they see no urgency to help Federal Express build a market presence in Japan and elsewhere in Asia.³⁶

After heavy financial losses, Federal Express abruptly shifted its international strategy in 1992, selling off its expensive European ground network to local carriers to concentrate on intercontinental deliveries. Under the strategy, Federal Express relies on a network of local partners to deliver its packages. Also, Federal Express entered into an alliance with TNT to share space on Federal Express' daily trans-Atlantic flights. Under the agreement, TNT flies packages from its hub in Cologne, Germany, to Britain, where they are loaded onto Federal Express' daily New York flight.³⁷

UPS has also built up an international presence. In 1988, UPS bought 8 smaller European airfreight companies and Hong Kong's Asian Courier Service, and it announced air service and ground delivery in 175 countries and territories. However, it has not been all smooth sailing for UPS either. UPS had been using Flying Tigers for its Pacific shipments. The acquisition of Flying Tigers by Federal Express left UPS in the difficult situation of shipping its parcels on a competitor's plane. UPS was concerned that its shipments would be pushed to the back of the aircraft. Since there were few alternative carriers, UPS pushed for authority to run an all-cargo route to Tokyo, but approval was slow in coming. "Beyond rights," to carry cargo from Tokyo to further destinations (such as Singapore and Hong Kong), were also difficult to gain.

In March 1996, UPS sidestepped years of frustrations associated with building an Asian hub in Tokyo by announcing that it would invest \$400 million in a Taiwan hub, which would henceforth be the central node in its Asian network. The decision to invest in an Asian hub followed closely on the heels of a 1995 decision by UPS to invest \$1.1 billion to build

a ground network in Europe. In September 1996, UPS went one step further toward building an international air express service when it announced that it would start a pan-European next-day delivery service for small packages. UPS hoped that these moves would push the international operations of the carrier into the black after 8 years of losses.³⁸

Industry Evolution, 1997–2010

Pricing Trends

The industry continued to grow at a solid rate through 2000, which helped to establish a stable pricing environment. In 2001, things took a turn for the worse. Recessionary conditions in the United States triggered a 7.6% decline in the number of domestic packages shipped by air. Even though the economy started to rebound in 2002, growth remained sluggish by historic comparison, averaging only 4% per annum.³⁹ Despite this, pricing discipline remained solid. Unlike the recession in 1990–1991, there was no price war in 2001–2002. In early 2002, UPS pushed through a 3.5% increase in prices, which was quickly followed by the other carriers. The carriers were able to continue to raise prices, at least in line with inflation, through to 2008. They were also successful in tacking on a fuel surcharge to the cost of packages to make up for sharply higher fuel costs.⁴⁰ During the 2002–2006, the average revenue per package at both UPS and FedEx increased as more customers opted for expedited shipments and as both carriers shipped a high proportion of heavier packages.⁴¹ The global financial crisis of 2008–2009 and the recession that it ushered in did lead to a slump in volume, a shift to deferred shipping, and more pricing pressures. At FedEx for example, the average revenue per overnight package fell from \$18.42 in 2008 to \$16.04 in 2010. However, volume and pricing trends improved in 2011 along with the economy, and revenue per package at FedEx rose to \$18.08 by the 4th quarter of 2010.⁴²

Continuing Growth of Logistics

During 1997–2010 all players continued to build their logistics services. During the 2000s, UPS was much more aggressive in this area than FedEx.

By 2010, UPS' logistics business had revenues of \$8.7 billion. UPS was reportedly stealing share from FedEx in this area. FedEx reportedly decided to stay more focused on the small package delivery business (although it continues to have a logistics business). Most analysts expected logistics services to continue to be a growth area. Outside of the North American market, DHL emerged as the world's largest provider of logistics services, particularly following its 2006 acquisition of Britain's Exel, a large global logistics business.

Despite the push of DHL and UPS into the global logistics business, the market remains very fragmented. According to one estimate, DHL, now the world's largest logistics company, has a 5.5% share of the global market in contract logistics, UPS has a 3% share and TNT has a 2.2% share.⁴³ The total global market for contract logistics was estimated to be worth over \$200 billion in 2005. In 2006, TNT sold its logistics business to Apollo Management L.P. for \$1.88 billion so that it could focus more on its small package delivery business.

Expanding Ground Network

In the late-1990s and early-2000s all the main carriers supplementing their air networks with extensive ground networks and ground hubs to ship packages overnight. With more customers moving from overnight mail to deferred services, such as second-day delivery, this shift in emphasis has become a necessity. Demand for deferred services help up reasonably well during 2001, even as demand for overnight packages slumped. Prices for deferred and ground services are considerably lower than are prices for air services, but so are the costs.

UPS has been the most aggressive in building ground delivery capabilities (of course, it already had extensive ground capabilities before its move into the air). In 1999, UPS decided to integrate overnight delivery into its huge ground transportation network. The company spent about \$700 million to strengthen its ground delivery network by setting up regional ground hubs. By doing so, it found it could ship packages overnight on the ground within a 500-mile radius. Because ground shipments are cheaper than air shipments, the result was a significant cost savings for UPS. The company also deferred delivery of about 123 aircraft that were on order, reasoning that they would not be needed as

quickly because more of UPS' overnight business was moved to the ground.⁴⁴

FedEx entered the ground transportation market in 1998 with its acquisition of Caliber Systems for \$500 million. This was followed by further acquisitions in 2001 and 2006 of significant U.S. trucking companies, including the 2006 acquisition of Western Motor Lines, a provider of long haul trucking services in the U.S. with sales of around \$1 billion. Western was re-branded as FedEx National LTL. By 2006, FedEx was able to provide ground service to a level that was similar to UPS.

In addition, FedEx struck a deal in 2001 with the U.S. Postal Service (USPS), under which it agreed to provide airport-to-airport transportation for 250,000 lbs. of USPS Express Mail packages nightly and about 3 million lbs. of USPS Priority Mail packages. The Priority Mail was to be moved on FedEx planes that normally sit idle during the day. The deal was reportedly worth \$7 billion in additional revenues to FedEx over the 7-year term of the agreement. In addition, FedEx reaped cost savings from the better utilization of its lift capacity. As of 2010, FedEx and the USPS still cooperate with each other.

Bundling

Another industry wide trend has moved toward selling various product offerings—including air, ground, and sea—livery, ground package offerings, and logistics services—to business customers as a bundle. The basic idea behind bundling is to offer complementary products at a bundled price that is less than if each item had been purchased separately. Yet again, UPS has been the most aggressive in offering bundled services to corporate clients. UPS is clearly aiming to set itself up as a one-stop shop offering a broad array of transportation solutions to customers. FedEx has also made moves in this area. Airborne Express started to bundle its product offerings in mid-2001.⁴⁶

Retail Presence

In 2001, UPS purchased Mail Boxes Etc. for \$185 million. Mail Boxes Etc. had 4,300 franchise locations, most in the United States, who operated small retail packaging, printing and copying stores. At that time, Mail Boxes Etc. was shipping some 40 million

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packages per year, around 12 million of which were via UPS. UPS stated that it would continue to allow the Mail Boxes stores to ship packages for other carriers. In 2003, the stores were re-branded as the UPS Store. While some franchisees objected to this move, the vast majority ultimately switched to the new brand.⁴⁷ In addition to the franchise stores, UPS has also begun to open wholly owned UPS stores, not just in the United States, but also internationally, and by 2006 had 5,600 outlets. In addition to The UPS Store, the company put UPS Centers in office supplies stores, such as Office Depot, and by 2006 it had some 2,200 of these.

In 2004, FedEx followed UPS by purchasing Kinko's for \$2.4 billion. Kinko's, which had 1,200 retail locations, 90% in the United States, focused on providing photocopying, printing and other office services to individuals and small businesses. FedEx has plans to increase the network of Kinko's stores (now called FedEx Office) to 4,000. In addition to providing printing, photocopying, and package services, FedEx is also experimenting using FedEx Office stores as mini warehouses to store high value goods, such as medical equipment, for its supply chain management division.⁴⁸

The Entry and Exit of DHL

In the late-1990s, DHL was acquired by Deutsche Post. Deutsche Post also spent approximately \$5 billion to acquire several companies in the logistics business between 1997 and 1999. In November 2000, Deutsche Post went private with an initial public offering that raised \$5.5 billion and announced its intention to build an integrated global delivery and logistics network. Many believed it was only a matter of time before the company entered the United States. Thus, few were surprised when in 2003 DHL acquired Airborne Express. Under the terms of their agreement, Airborne Express sold its truck delivery system to DHL for \$1.05 billion. Airborne's fleet of planes were moved into an independent company called ABX Air, owned by Airborne's shareholders, and which continues to serve DHL Worldwide Express under a long-term contract. This arrangement overcame the U.S. law that prohibits foreign control of more than 25% of a domestic airline. In the meantime, DHL spun its own fleet of U.S.-based planes into a U.S.-owned company called Astar,

to also escape the charge that its U.S. airline was foreign owned. Between 2003 and 2005 DHL reportedly invested some \$1.2 billion to upgrade the capabilities of assets acquired from Airborne.⁴⁹

The DHL acquisition created 3 major competitors in both the U.S. and global delivery markets. By the fall of 2003, DHL had launched an ad campaign aimed at UPS and FedEx customers promoting the service and cost advantages that they would benefit from because of its merger with Airborne. DHL targeted specific zip code areas in its advertising promoting its claim to be the number one in international markets, something important to many companies given the increasing importance of global commerce. In its ads, DHL reported that "current Airborne customers will be connected to DHL's extensive international delivery system in more than 200 countries."⁵⁰

DHL's stated goal was to become a powerhouse in the U.S. delivery market. While its share of the U.S. small package express market remained small after the acquisition at around 10%, many thought that DHL would benefit from ownership by Deutsche Post and from its own extensive ex-U.S. operations. When it first acquired Airborne, Deutsche Post stated that the U.S. operation would be profitable by the end of 2006.

However, the company ran into "integration problems" and suffered from reports of poor customer services and missed delivery deadlines. In 2006, DHL management stated that they now did not see the North American unit turning profitable until 2009. DHL lost some \$500 million in the U.S. in 2006.⁵¹ In 2007, they lost close to \$1 billion. With corporate customers leaving for rivals, and market share sliding, in late-2008, DHL announced that it would exit the U.S. market. DHL shut down its air and ground hubs, laid off 9,600 employees, and took a charge against earnings of some \$3.9 billion. In explaining the exit decision, DHL management stated that they underestimated just how tough it would be to gain share against FedEx and UPS.⁵²

Continued Globalization

Between 1997 and 2010, UPS and FedEx continued to build out their global infrastructure. By 2010, UPS delivered to more than 200 countries. Much of the within country delivery is handled by local

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company has 3 main hubs. In addition to its main U.S. hub in Louisville, Kentucky, it has hubs in Cologne, Taipei, Miami (serving Latin American traffic), and the Philippines. In 2002, UPS launched an intra-Asian express delivery network from its Philippines hub. In 2004, it acquired Menio World wide Forwarding, a global freight forwarder, to boost its global logistics business. In the same year, it also acquired complete ownership of its Japanese delivery operation (which was formally a joint venture with Yamato Transport Company). In 2005, UPS acquired operators of local ground networks in the UK and Poland, and it is pushing into mainland China, which it sees as a major growth opportunity.

Like UPS, FedEx serves more than 200 countries around the world, although also like UPS, most of the local ground delivery is in the hands of local partners. FedEx has recently been focusing upon building a presence in both China and India. The company has announced the development of a new Asian Pacific hub in Guangzhou China. This will be FedEx's 4th international hub. The others are in Paris (handling intra-European express), the Philippines (handling intra-Asian express), and Alaska (which handles packages flowing between Asia, North America, and Europe). In 2006, FedEx signaled its commitment to the Chinese market by buying out its joint venture partner, Tianjin Datian W. Group, for \$400 million. The acquisition gave FedEx control of 90 parcel handling facilities and a 3,000 strong work force in China.⁵³

While UPS and FedEx dominate the U.S. market for small package express delivery services, in Europe DHL and TNT lead with 23% and 11% respectively (TNT, formally an Australian enterprise, was acquired by the Royal Netherlands Post Office in 1996). In the intercontinental market, DHL leads with a 36% share, while in intra-Asian traffic Asia Yamato of Japan is the leader with a 20% share followed by Sagawa with 16%. The fragmented nature of the European and intra-Asia Pacific markets suggest that much is still at stake in this increasingly global business.

The U.S. and Global Markets in 2010

With DHL out of the picture in the United States, FedEx and UPS tightened their hold on the market. The USPS held onto a small share of the overnight express market and a somewhat bigger share of the

ground market (see Exhibit 2). Despite challenging economic conditions, UPS and FedEx were both to push through list rate increases of around 4% during the late-2000s, although after negotiations with large corporations, those increases were reduced to 2-3%. They were also able to add surcharges to prices, which helped given the price of oil in the late-2000s.

Domestic volume continued to expand at a moderate pace and tended to match the growth in U.S. GDP. Most of the domestic volume growth was in the ground network. International volume growth was correlated to the growth in international trade and was generally higher than domestic growth. The volume of international trade slumped in 2009, but rebounded strongly in 2010 and 2011. While the volume of document shipments was declining due to electronic transmission, the slack was being picked up by increased shipment of goods purchased online, and growth in low weight high value inventory, such as electronic components. The globalization of supply chains and moves toward just-in-time inventory was helping both companies.⁵⁴

By 2010, UPS was shipping some 15 million packages a day through its network, while FedEx was moving between 6 and 7 million. Peak volumes were hitting 25 million for UPS and 16 million for FedEx.

Both FedEx and UPS were solidly profitable in 2010 (see Exhibit 3). Profit margins in the industry were leveraged to volume; higher volume meant significant margin expansion. Both FedEx and UPS were looking to a strong 2011 as volume expanded. The USPS, however, was deep in the red. In 2010, the

Exhibit 2: U.S. Market Share (%), 2010

	Overnight Express	Deferred Air	Ground
FedEx	54%	48%	22%
UPS	41%	52%	61%
USPS	6%	0%	16%
Market Size	\$14 billion	\$6 billion	\$34 billion

Source: W.J. Greene et al, "Airfreight and Surface Transport: Parcel Industry Primer," Morgan Stanley, May 25, 2011.

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ground market (see Exhibit 2). Despite challenging economic conditions, UPS and FedEx were both able to push through list rate increases of around 4–5% during the late-2000s, although after negotiations with large corporations, those increases were often reduced to 2–3%. They were also able to add fuel surcharges to prices, which helped given the high price of oil in the late-2000s.

Domestic volume continued to expand at a moderate pace and tended to match the growth in U.S. GDP. Most of the domestic volume growth was in the ground network. International volume growth was correlated to the growth in international trade and was generally higher than domestic growth. The volume of international trade had slumped in 2009, but rebounded strongly in 2010 and 2011. While the volume of document shipments was declining due to electronic transmission, the slack was being picked up by increased shipment of goods purchased online, and growth of low weight high value inventory, such as electronic components. The globalization of supply chains and moves toward just-in-time inventory was helping both companies.⁵⁴

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Exhibit 3: Comparing FedEx and UPS in 2010

	FedEx	UPS
Revenue	\$34.7 billion	\$49.5 billion
Net Income	\$1.12 billion	\$3.49 billion
Cash Flow	\$3.14 billion	\$3.84 billion
Capital Expenditure	\$2.82 billion	\$1.39 billion
ROIC	741%	19.39%

Source: Company Reports

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USPS lost \$8 billion on total revenues of \$67 billion. Traditional mail delivery was now a declining business as ever more mail was sent electronically. Some believed that the privatization of the USPS was inevitable.

Despite its exit from the U.S. market, DHL still was the largest operator globally in 2010 with \$71 billion in revenues, and \$2 billion in net income, followed by UPS and FedEx. TNT was in 4th place with \$15 billion in revenues and \$1 billion in net income.

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