

Successful entry strategies on the deregulated US domestic market – the case of Southwest Airlines

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Abstract

In slightly more than 30 years Dallas-based Southwest Airlines has grown into the fourth largest airline in the USA and the entire world. With its innovative low-cost low-fare no-frills business formula it has indeed revolutionized air travel. What is more the airline has become the most consistently profitable airline ever as well as the safest operator on the domestic US market. In this paper we will first discuss in much detail Southwest's business model as opposed to the traditional network carriers' approach. Then we will demonstrate that the unprecedented rise of Southwest Airlines – which has spawned an ever increasing number of epigones – reveals that the true effectiveness of strategic barriers to entry into the airline industry such as loyalty programs, computer reservations systems etc. has long been overestimated by economists, airline professionals, and policymakers alike. On the contrary, we show that infrastructure bottlenecks – which, in turn, are overwhelmingly caused or at least amplified by ill-designed allocation rules and access regulations – must be considered the only effective protection for inefficient incumbents.

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Successful Entry Strategies on the Deregulated US Domestic Market – the Case of Southwest Airlines

Andreas Knorr and Andreas Arndt*

Introduction

Founded in 1967 in Dallas, Texas, but – its application for an operating licence being the object of a protracted legal dispute initiated by local incumbents Braniff, Trans Texas (later to become Texas International), and Continental – unable to enter revenue service until June 14, 1971, Southwest Airlines (SWA) has not only grown, in terms of revenue passengers enplaned, into the fourth largest airlines in the USA and, at that, of the entire planet by 2001. While most other start-ups on the deregulated US market failed to survive even their first few years in the business, SWA's revolutionary formula – low-cost, low-fare, no-frills, high-frequency, short-haul, point-to-point-service instead of the established airlines' traditional high-cost, high-fare, full-service, hub-and-spoke operation – also turned the company into the most consistently profitable airline ever. It comes as no surprise then that SWA has become a sort of role model for the growing number of low-cost carriers shaking up the industry around the globe: Ryanair, easyJet and GO in Europe,¹ Germania in Germany, AirTran (formerly known as ValuJet) and JetBlue in the USA, Westjet in Canada, and VirginBlue in Australia, to name just a few. Despite their momentary spectacular growth rates and profits, the final jury on the long-term viability of this so-called second wave of low-cost outfits – all first-wavers except for SWA, e.g. PeoplExpress and Air Florida, folded quickly² – is still out. Also, all the low-cost subsidiaries and brands created by the big US carriers in reaction to SWA's and its clones' expansion have, in spite of their parents' financial muscle, either gone under or are being massively scaled down in the aftermath of 9/11.³

The very mixed fortunes of its emulators prove, therefore, that adopting a SWA-style business model *per se* is no guarantee for long-term success. And while it is true that passengers on the domestic US market as a whole have enjoyed significant benefits since, and because of, deregulation – according to a study by the U.S. Department of Transportation essentially the result of a development it named the “low cost airline service revolution”⁴ – in some key markets significant barriers to entry do persist.⁵ They continue to shield incumbents effectively from low-fare competitors including, in some cases, SWA. What is more, even SWA, which in 2000 accounted for roundabout ninety

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¹ In May 2002, easyJet announced its takeover of GO.

² For a detailed analysis see *Gudmundsson* (1998).

³ For details see *Woodyard* (2001).

⁴ See *United States Department of Transportation* (1996).

⁵ See *United States General Accounting Office* (1996).

(!) percent of all low-fare airline service in the USA,⁶ almost failed to take wing in its start-up period, only narrowly escaping bankruptcy after competitors practiced price and non-price predation against it. The lessons from SWA's rise, most of them challenging conventional (and scholarly) wisdom about the appropriate corporate strategy in a deregulated business environment, therefore offer invaluable insights into the nature of competition in the airline industry. In particular, they will help policy-makers and economists to make progress in identifying hard-core post-deregulation barriers to entry, in better assessing their anticompetitive impact and, hopefully, in substantially lowering them for the benefit of the flying public and society as a whole.

SWA: A Company Profile

The Track Record: Key Corporate Data 1971-2001

The data in table 1 reflects SWA's spectacular corporate growth from the tiny 4-aircraft airline it was in 1971 into one of the largest carriers on the US domestic market, as well as worldwide.

Table 1: Basic SWA Facts and Figures

	1971	2000	2001
Size of fleet	4	344	355
Number of employees (full-time equivalent)	195	29,274	31,580
Number of revenue passengers	108,554	63,678,261	64,446,773
Number of cities/airports (states) served	3 (1)	58 (29)	59 (30)
Total operating revenues	\$ 2.13 mio	\$ 5.65 bn	\$ 5.55 bn
Net income (loss)	(\$ 3.8 mio)	\$ 625.2 mio	\$ 511.1 mio
Market share (as percentage of Domestic revenue passengers carried)	≈0 %	10,1 %	n/a yet
Market share (as percentage of domestic revenue passenger miles)	≈0 %	6,1 %	n/a yet

Sources: *Freiberg/Freiberg* (1996, p. 326); *SWA* (2001, 2002a, 2002b); *Air Transport Association* (2002a).

An even more impressive picture emerges when some more detailed company-specific information is added:

- Including 2001, SWA has posted annual profits every single year since 1973, i.e. for 29 consecutive years. What is more, profits have increased, in absolute terms, every year between 1992 and 2000, i.e. for nine years in a row.⁷

⁶ See *Southwest Airlines* (2001: 4).

⁷ See *Southwest Airlines* (2001: 4).

- In the fourth quarter of 2001, SWA announced its 102nd consecutive quarterly dividend,⁸ a “record of consistency unmatched in an industry better known for its wild lurches from feast to famine“.⁹
- In 2000, it accomplished an operating margin of 18.1 per cent, and a net margin of 11.1 per cent, by far the best figures of any major USA airline and second in the world only to Ryanair, an Irish SWA-clone operating successfully in Europe.¹⁰ Even in the extremely difficult economic climate in 2001, it managed to achieve margins of 11 per cent and 9.1 per cent, respectively.¹¹
- SWA’s current net debt/total capital ratio of 33 percent (excluding operating leases for aircraft and ground facilities) is the lowest in the US industry (American: 59 per cent; Delta: 59 per cent; United: 69 per cent; Continental: 88 per cent; USAirways: 92 per cent; Northwest: 96 per cent; AirTran, the second largest low cost operator on the US market: 98 per cent).¹²
- Standard & Poor upgraded SWA’s credit rating for senior unsecured fixed-rate debt from A⁻ to A in 2000, again by far the best rating for any US airline (SWA is rated A⁻ or equivalent by the two other major US rating agencies, Moody’s and Fitch).¹³
- At 7.19 cents/ASM¹⁴ SWA boasts the lowest operating costs of all major US carriers, outperforming the competition by a margin of 20 to 40 per cent.¹⁵
- With a market valuation of 14.9 bn \$ (figure for December 2001) SWA is worth more than its six largest US competitors – American (having recently taken over TWA), Delta, United, Northwest, and USAirways – combined.¹⁶
- Never in its corporate history, not even in the crises years 1979 (second oil price shock), 1982/83 (US recession), 1991/92 (Gulf War) and 2001 (9/11), each event forcing massive industry-wide lay-offs, has SWA had to furlough any staff. By comparison, in 2001, the major US airlines dismissed a total of 80,300 employees, out of the industry’s total of 567,800 employees on 9/11 (the latter figure includes SWA’s roundabout 31,000 staff!).¹⁷ And while the competition has not yet announced any new hirings for the time being, SWA has announced that it will add roughly

⁸ See *Southwest Airlines* (2002c).

⁹ *Done* (2001: VII).

¹⁰ See *Southwest Airlines* (2001: 1 and 7). – Ryanair achieved a net margin of 21.4 per cent in 2001. See *Ryanair* (2001: 2).

¹¹ Own calculations based upon *Southwest Airlines* (2002a).

¹² See *Cameron* (2001: 17). – If all operating leases were included the ratio would rise to slightly less than sixty per cent, still by far the best figure in the US airline industry.

¹³ See *Southwest Airlines* (2001: 17 and 24).

¹⁴ See *Southwest Airlines* (2002b).

¹⁵ See *Doganis* (2001: 131). – If adjusted for SWA’s significantly much lower average trip length compared to the competition’s, its cost advantage per ASM is even greater.

¹⁶ See *Done* (2001: VII).

¹⁷ See *Freiberg/Freiberg* (1996, p. 7); *Air Transport Association* (2002b: 6). – In its start-up phase in the early 1970ies, a brief cash shortage forced SWA to temporarily lay off 3 (three) staff who were rehired soon.

4,000 employees to its workforce in 2002, among them around 250 pilots and 1,200 cabin crew.¹⁸

- Aside from paying at least market wages, SWA was the first airline to introduce a profitsharing plan for its employees as early as 1974.¹⁹
- Setting another industry record, around 81 per cent of SWA’s staff are unionized.²⁰
- According to U.S. Department of Transportation statistics (the Air Travel Consumer Report) SWA has had the lowest number of complaint per 100,000 passengers carried in the last ten consecutive years.²¹ Moreover, setting another unprecedented all-time industry record, it came out, between 1992 and 1996, the best US carrier in all three quality of service categories then surveyed by the agency (and has still been ranking high ever since).²²
- Finally, defying widespread public fears that low fares may come at the cost of flight safety, SWA boasts, alongside America West, another post-deregulation start-up, with only one hull-loss and no fatalities on record so far, by a wide margin the best safety record of all US airlines and one of the best safety statistics worldwide (see tables 2 and 3).²³

Table 2: Casualties x 1000/Mio. Revenue Passenger Kilometers (1973-2001)

Southwest Airlines	0.00
America West	0.00
Continental Airlines	0.03
Delta Air Lines	0.09
Northwest Airlines	0.09
United Airlines	0.09
US Airways	0.10
American Airlines	0.30
TWA	0.32

Source: *Richter/Wolf* (2002).

¹⁸ See *Flug Revue* (2002: 25). – It will also be the first US airline to eventually take delivery of most of the aircraft the delivery of which it had decided to postpone after 9/11. See *Lewis* (2002: 7).

¹⁹ See *Southwest Airlines* (2002b). – Employees currently own around 10 per cent of SWA’s stock.

²⁰ *Ibd.*

²¹ See *Southwest Airlines* (1997: 16).

²² The three categories then were: mishandled baggage, on-time performance, and overall customer satisfaction as measured by the number of complaints per 100,000 passengers carried. Recently, a fourth category – oversales (i.e. overbookings) – has been added.

²³ See *Richter/Wolf* (2002: 86f).

Table 3: Number of Total Hull Losses (1973-2001)

Southwest Airlines	1
America West	1
Northwest Airlines	3
Delta Air Lines	5
USAirways	8
United Airlines	8
Continental	8
TWA	10
American Airlines	11

Source: Richter/Wolf (2002).

SWA's Business Model

Obviously, SWA has managed to identify a sustainable competitive advantage its network-based rivals have found impossible to imitate, and most of its low-cost epigones have been unable to preserve while expanding their operation. As mentioned above, analysts and academic researchers have long argued that SWA's success is due to the carrier having identified a market niche neglected by the traditional network carriers – such as Delta, United, American, USAirways, Continental and Northwest – and stuck with it ever since: low-cost, low-fare, no-frills, high-frequency, short-haul, point-to-point service between secondary or uncongested airports, primarily aimed at price-sensitive (i.e. leisure) travellers. The network carriers' product, by contrast, is usually described as high-cost, high-fare, full-service, medium- to long-haul, medium- to high-frequency (mostly) connecting service via hubs, catering for the special needs of a price-insensitive business traveller clientèle.

While this has always been an incomplete and hence somewhat misleading description of both SWA's and the traditional carriers respective markets – SWA has always aimed strongly at the business travel segment, in particular by being the only low-cost carrier to offer high-frequency service,²⁴ and most of the network carriers' passenger are indeed price-sensitive leisure travellers – the gap between SWA's and the network-based carriers' business models has narrowed over time. Examples:

- Initially being the unrestricted low fares paragon with a simple peak off-peak fare structure, SWA reacted to the network carriers more and more sophisticated yield management techniques in 1986 by also introducing basic yield management,²⁵ offering ever since discounted restricted fares (significantly undercutting its own low unrestricted fares) with similar advance purchase and minimum stay requirements, too. Given SWA's substantial cost advantage, no major carrier has been able to match these extremely low fares for any extended period of time, while SWA managed to improve and stabilize its profits in consequence. Still, however, SWA has

²⁴ The same is true for most European low-cost carriers which, like easyJet and GO report a business traveller share of 60 and 40 per cent respectively. See *The Economist* (2001: 69); *Rubython* (2001: 25). – For recent empirical analyses on the ever increasing attractiveness of low-cost carriers for business travellers in the European context see *Mason* (2000 and 2001).

²⁵ See *Petzinger* (1995: 329f.)

stuck with a very simple fare structure in order to reduce transaction costs for both the company and its customers to a minimum. As a result, SWA has the lowest fare dispersion of all major US carriers.²⁶

- In 1987 SWA created a frequent-traveller bonus scheme of its own (Rapid Rewards, until 1996 known as Company Club). Being based upon the number of trips taken instead of the mileage accumulated, it is widely perceived to be the least restrictive and most generous loyalty programme of all US airlines.
- After taking delivery of its first Boeing 737-700 aircraft, the only 737-variant offering transcontinental range, SWA has begun entering selected long-haul markets, such as Providence (Rhodes Island) – Phoenix (at 2,271 miles the longest SWA route so far), with low-frequency service (usually 2 or 3 round trips per day). This move has pushed the company's average passenger trip length up to 690 miles (from 563 miles in 1997) and the average aircraft trip length to 514 miles, or 1 hour 33 minutes (from 425 miles in 1997).²⁷
- Between 20 and 30 per cent of SWA's customers are through passengers on one- or multi-stop services or are on-line connecting (flow) traffic at its primary airports.²⁸
- Four of the network carriers, in turn, set up their own low cost divisions – United's Shuttle by United, USAir's MetroJet, Continental's Continental Lite, and Delta's Delta Express – to compete head-to-head with SWA. However, this so-called 'airline within the airline'-model failed miserably. While denting SWA's profits for just a couple of quarters,²⁹ these operations virtually haemorrhaged their parent companies' resources, so that they had to be discontinued or massively scaled down.
- As part of a wider cost reduction plan to counter SWA's cost advantage the network carriers also eliminated most inflight food service in their economy class cabins (traditionally, none of the big US carriers has ever offered free alcoholic beverages in economy class on domestic services).
- Most of the specific amenities offered by network carriers, such as lounge access or preferred check-in facilities, are not generally available but restricted to the small minority of full-fare first- or business class ticketholders and to those passengers who have reached elite status in their frequent traveller programs.

We will therefore argue in the following that SWA's business model should be more broadly defined, including not only the standard features of the low-cost, low-fare model, which it put to perfection, but also its specific approach to labor relations, financial and strategic management.

²⁶ The highest fares on SWA are about twice the median fare for all passengers. For the domestic services of all other US carriers, it is at least three times the median. See *Transportation Research Board* (1999: 1-10).

²⁷ See *Southwest Airlines* (1998: 18; 2001: F22f; 2002b).

²⁸ See *Southwest Airlines* (2001)

²⁹ See *Southwest Airlines* (1996, p. 5).

Excursus: Cost Advantages of Low-cost Airlines – the Traditional View

According to conventional wisdom, low-cost airlines derive their cost advantage vis-à-vis network carriers from three highly interdependent sources: lower input costs plus simplified, and hence less costly, product and process design.³⁰ The most important inputs being staff (onboard, ground and administrative personnel), aircraft, aircraft maintenance and servicing, and airport facilities (gates, check-in counters, landing and parking fees), savings may result from either of two sources: lower input prices or higher productivity. The former, then, may result from

- lower nominal wages for all employee groups,
- acquiring older, and hence less expensive, used aircraft, and
- serving underutilized secondary or uncongested airports charging lower fees.³¹

While this strategy has been pursued by most low-cost airlines, it has some serious pitfalls. In particular, this cost advantage is only sustainable if a large pool of qualified personnel as well as plenty of idle second-hand aircraft are continually available – highly unlikely in the notoriously volatile airline business. What is more, the supply of inexpensive, underused airport capacity may decrease as low-cost operators grow. Finally, while the sticker-price of second-hand aircraft may be lower, their direct operating costs – in particular because of their higher specific fuel consumption – always exceed those of brand new equipment.

Innovations in both product and process design therefore promise to be more sustainable sources of cost competitiveness. Aside from offering point-to-point service, the low-cost carriers' 'no-frills' product design therefore aims at eliminating all product features the target groups of passengers do not typically demand (a welcome side-effect of this kind of streamlining being simplified, and hence more cost-effective, operating processes). Typically, the low-cost 'no-frills' product has the following features:³²

- One-class, high density seating;
- *no* inflight food service apart from non-perishable snack items like peanuts (aside from allowing the airline to replace the galley sections of its planes with more seats, this also helps low-cost carriers to reduce turnaround times and cleaning costs; moreover less cabin crew is required);
- *no* advance seat assignment;
- *no* frequent-flyer programs;
- *no* frequent traveller lounges at airports;
- *no* costly interlining agreement with other airlines; and

³⁰ See, amongst others, *Barkin/Hertzell/Young* (1995).

³¹ With Phoenix, Las Vegas, and Los Angeles – its 1st, 2nd and 8th most important markets – SWA does, however, serve the 9th, 7th, and 3rd busiest US-airports (in terms of passengers enplaned). On the other hand, SWA discontinued service to Denver Stapleton and, recently, to San Francisco International Airport – scaling up service to adjacent Oakland and San José instead –, after excessive delays at these fields continued to impact negatively on its operation.

³² See *Lawton* (2000: 96).

- *no* participation in codesharing arrangements or other forms of airline alliances.

Finally, significant cost savings may be realized through optimizing processes, primarily in the two areas distribution as well as aircraft and airport operations. Practices to substantially lower distribution costs include

- bypassing computer reservation systems (CRS) and travel agents through direct selling and telemarketing (using the internet and toll-free phone sales via reservation centers), thereby saving commissions and service fees; and
- the introduction of paperless – electronic – ticketing.

The key to reducing the costs of aircraft and airport operations is to achieve high average daily utilization rates of these assets, essentially through short turnaround times on the ground. Whereas the traditional network carriers have to schedule average turnaround times of between 45 and 60 minutes in order to keep their hub-and-spoke-operations commercially viable – which are designed to improve load factors by maximizing the number of on-line connections offered –, low-cost carriers typically make do with a mere 20 to 30 minutes for their point-to-point service between secondary or uncongested airports. This higher utilization, in turn, translates into one or two additional revenue services per aircraft per day for low-cost airlines as compared to network carriers.

The Specific Sources of SWA’s Lasting Competitiveness

Of course, SWA has taken advantage of low input costs wherever possible and reasonable. Most noteworthy in this respect, it has standardized its fleet around the Boeing 737 aircraft, thus reaping enormous maintenance, training, staffing and scheduling-related cost savings. Moreover, SWA has been among the launch customers for three of the four 737-variants it is currently operating – the B737-300, B737-500, and B737-700 –, hence profiting not only from significant manufacturer’s discounts (launch customers’ rebates typically amount to around 30 per cent of the list price), but also from the very favorable economics associated with operating the youngest fleet of all major US airlines.³³ What is more, as stated above, SWA also manages to reduce infrastructure access costs by focussing on underutilized, uncongested or secondary airports.

These permanent cost-saving efforts on the input side notwithstanding, SWA has primarily relied throughout its history on the more sustainable strategy of becoming the industry’s cost leader by maximizing its overall productivity through clever product and process design:

- In part, these productivity-induced savings, too, result from the company’s one-class, point-to-point service to/from secondary or uncongested airports,³⁴ allowing it to achieve the industry’s quickest turnaround times – complemented by a mean

³³ On average, SWA aircraft are only 8.75 years old. 33 older B737-200 are, at an average age of 18.8 years, being phased out and will be replaced by state-of-the-art B737-700 aircraft. See *Southwest Airlines* (2001: 12; 2002b).

³⁴ Whenever SWA serves busier airports, including other carriers’ hubs, it avoid scheduling its flight during peak periods, opting for the periods between connecting banks instead. See *Transport Research Board* (1999: 1-15).

ground taxi time for SWA aircraft of only 3 minutes 44 seconds³⁵ –, translating, at an average of 11.18 hours per day,³⁶ into the highest industrywide aircraft utilization rate. This not only maximizes fleet and air crew productivity.³⁷ Both ground staff and ground infrastructure (gates, check-in facilities) can thus be utilized in the most efficient manner, too.

- SWA has the major US airlines lowest distribution costs, not least because of it being the pioneer in the use of technology to automatize sales and ticketing. More than 70 per cent of all seats are sold directly by SWA – a marked contrast to the industry average of 20 to 25 per cent – through two different distribution channels: phone reservation centers and, increasingly, the internet. Having been the very first US airline to adopt online booking, SWA is currently earning around 40 per cent of its ticket revenues from internet sales,³⁸ whereas its competitors only attain figures between 5 and 10 per cent.³⁹ Ticketless travel (i.e. electronic instead of paper tickets), in 2000 being chosen by more than 80 per cent of SWA’s customers, was introduced systemwide on January 31, 1995, another industry first.⁴⁰ And finally, as early as 1980, SWA was the first US airline to install automated ticket vending machines (ATVM) at its main airports with the aim to reduce the time passengers had to wait in line at ticket counters without having to increase the number of sales agents.⁴¹

While the proceeding section gives a good description of SWA’s operation, some more information is necessary to get the full picture on why it has been unique – including the network carriers’ doomed airline-within-the airline low-cost outfits – in sustaining its competitive advantage while realizing impressive corporate growth. In our view, the SWA low-cost business model is special for being built on at least five more, and mutually reinforcing, cornerstones, its various competitors have failed to notice and/or imitate: a high quality of service, excellent labor relations, unconventional advertising and public relations, conservative corporate finance, and organic corporate growth.

High Quality of Service

Due to their point-to-point operation, low-cost carriers stand a good chance of offering better quality of service than their traditional network competitors in some, from the passengers’ perspective, crucial areas: on-time performance (their punctuality record is usually significantly better because there is no need to wait for delayed inbound connecting flights/passengers) and mishandled baggage (a small percentage of flow traffic inevitably decreases the risk of missing and misdirected baggage). In contrast to its epigones SWA has always been careful, however, to add another quality dimension to

³⁵ See *Southwest Airlines* (2002b).

³⁶ See *Southwest Airlines* (2001: 12).

³⁷ Although SWA’s pilot earn market wages, they cost around 40 per cent less to employ per block hour than the major US airlines’ average. See *Barkin/Hertzell/Young* (1995: 89).

³⁸ See *Southwest Airlines* (2002b).

³⁹ See *Pappas* (2001: 51).

⁴⁰ See *Southwest Airlines* (1996: 15; 2001: 15).

⁴¹ See *Freiberg/Freiberg* (1996: 139).

its low-fare product: the same high-frequency service as offered by its network competitors in order to minimize overall travel time for all customers and to fully meet the specific needs of the short-haul business traveller.

Excellent Labor Relations

In an industry notoriously plagued by labor strife, SWA has been unique in having the highest degree of unionization while never having fallen victim to industrial action. For its no-furlough policy and non-hierarchical, extremely decentralized organization, by paying standard wages, by establishing the industry's first profitsharing plan in 1974, through careful recruitment and comprehensive training, and, with one exception (see below), by pursuing a strict strategy of internal growth, SWA's management has obviously been much more successful than the competition in aligning the interests of all employee groups with the company's, thus creating and preserving a strong corporate culture, the underdog 'Southwest spirit'. With the unions' consent, in turn, management has been able to implement many important productivity-enhancing, extraordinarily flexible operational processes throughout the entire organization. Visible signs for the excellent labor-management relationship include an unprecedented 10-year labor contract between SWA and the Southwest Airlines' Pilot Union (it was signed in 1995) and SWA's having been repeatedly voted one of the most admired US companies as well as one of the best US companies to work for.⁴²

Unconventional Advertising and Public Relations

SWA has always made virtuous use of advertising in general and the media in particular to cultivate its underdog image and to promote its brand and product. Initially, SWA aggressively marketed itself as the 'Love airline': based at Dallas Love Field Airport, serving 'Love potions' and 'Love bites' (peanuts) on board, and hiring very attractive air hostesses only, it quickly managed to attract a large number of male business travellers.⁴³ Every addition to its route network was then advertised as spreading 'love' to the new destination. Even today, SWA's ticker symbol on the New York Stock Exchange is LUV. While raising a frown or two today, it is doubtful whether SWA would have survived its tough start-up phase without the 'Love' image. Later, in the more politically correct times of the 1990ies, it partly redefined its image to become a 'Symbol of Freedom', successfully insinuating that it had helped, through its low fares, to democratize flying.

Another example: In an effort to counteract decreasing service quality in the US airline industry, the United States Department of Transportation began, in the late 1980ies, to track the major carriers' performance in the three categories (on-time-performance, mishandled baggage, and customer complaints per 100,000 passengers boarded). With these statistics having been published ever since on a monthly and yearly basis, SWA came out as the best carrier of the year in all three categories for the five straight years between 1992-1996.⁴⁴ Although no official trophy was awarded by the Department of

⁴² For a survey of all pertinent recognitions SWA has received in its corporate history see *Southwest Airlines* (2002b).

⁴³ For details see *Freiberg/Freiberg* (1996: 36ff). Several of the ancient and more recent print ads and TV commercials are on display at SWA's homepage (<http://www.southwest.com>).

⁴⁴ See *Southwest Airlines* (1997: 16).

Transportation, of course, SWA quickly created a virtual ‘Triple crown’ trophy for its advertising purposes.

Finally, SWA was the first airline in the world to apply special paint schemes on a few of its aircraft, partly in honour of states it served (Arizona, Nevada), partly for use as flying advertisements for tourist attractions (e.g. Sea World) at key destinations, and some as a tribute to its own staff (the ‘Triple Crown One’, for achieving that feat five times in a row⁴⁵), generating additional media attention.

Conservative Corporate Finance

In stark contrast to the other major US airlines, SWA has always pursued a very conservative approach to corporate finance, by primarily relying on internally generated funds for its investments needs instead of taking on too much external debt. Not only has this approach resulted in SWA obtaining and maintaining the industry’s best credit rating, thereby reducing its costs of finance. What is more, this self-imposed restriction also shored up the company’s conservative growth strategy, shielding it effectively from the potentially disastrous consequences of excessive debt-financed expansion that turned out to be a key factor in many of its less prudent competitors’ decline or even demise.

Organic Corporate Growth

SWA has, from its inception, considered ground transportation to be its main competitor, and therefore tried to win over customer through low-fare, high-frequency short-haul service. The clear focus on this specific market niche that SWA has essentially kept until today also explains why the airline, before spreading its wings further, it has always opted to deploy newly acquired aircraft to beef up frequencies on existing city-pairs before expanding into new markets. As a result, SWA has on average added a mere two new destinations to its network every year since 1971 – offering high-frequencies from the very start –, although, in 2001, more than 165 cities had requested SWA to serve them.⁴⁶ Moreover, SWA has never expanded by withdrawing resources from its Texas home market (or other established markets) to employ them in other regions, thereby preserving a strong and very profitable home base and keeping customers loyal. Basically sticking with its short-haul niche, SWA also expanded rapidly into specific geographical regions – once it had decided to serve them. Throughout its history it very cautiously added one region after another to its network, in roughly the following sequence: Texas’ neighboring states, Midwest, Southwest, California, Pacific Northwest, Florida, and, from the mid-1990ies, the Northeast.⁴⁷

Finally, aside from the 1993 takeover of Morris Air, a small low-cost outfit based in Salt Lake City, operating a homogenous fleet of 21 B737 aircraft at that time on a complementary, not overlapping network in the US northwest, SWA has only grown internally. It was thus able to avoid the manifold pitfalls inevitably associated with the ensuing need to harmonize vastly different corporate cultures, seniority schemes, pay scales etc. As the fate of many its less prudent competitors, such as USAirways, Northwest and the late Texas Air, proves, SWA’s conservative approach to corporate growth may have shielded it from permanently tense labor relations and ‘imperial and

⁴⁵ The names of all SWA employees were painted on this plane. See *Southwest Airlines* (2000: 10).

⁴⁶ See *Southwest Airlines* (2002b).

⁴⁷ See *Southwest Airlines* (2000: 14f).

managerial overstretch’, and clearly help it sustain its very healthy financial position and its competitiveness.

To summarize, SWA’s specific business model immunized the carrier far better than its much more vulnerable competitors from the recurrent crises of the airline industry, letting it emerge ever stronger after each downturn. As a matter of fact, SWA expanded very strongly both during and immediately after the recession years 1980-82 and 1993-94, adding a total of 10 new destinations in each of these periods.⁴⁸

What is more, some exogenous factors have fuelled SWA’s and the entire low-cost segment’s spectacular growth worldwide, while at the same time brutally exposing a structural weakness of the traditional network carriers’ business model: their dangerous overdependence on passengers willing and able to pay an ever increasing premium for their service.⁴⁹ This once extremely profitable market segment has, however, dramatically shrunk in size in recent years in the US (and is elsewhere showing clear signs of saturation, too). In particular this is the result of three interdependent developments:

- widespread corporate downsizing – which is, in the light of tighter travel budgets, rendering business travellers’ demand for airline service increasingly price-sensitive;
- the substantial price hikes for full-fare tickets the network carriers regularly imposed upon their most loyal customers – only to use the additional proceeds thereof to substantially expand, and finance through internal cross-subsidization, their own low-fare offerings to counter the onslaught of low-cost carriers in many of their core markets;⁵⁰ and
- the phenomenal boom of fractional ownership (i.e. a company’s right to use a corporate aircraft jointly owned by a number of enterprises for a pre-determined number of flight hours a year).⁵¹

The ‘Southwest’-Effect: Recent Empirical Evidence

Still widely perceived to be a regional phenomenon and a mere niche player, a quantité négligeable, by the end of the 1980ies, SWA is now being credited with being the single most important competitive force in the US airlines industry, with its increasing market penetration being widely perceived to be the principal source of the significant savings and service improvements consumers have benefitted from in the post-deregulation era. The qualitative and quantitative analysis of this so-called ‘Southwest Effect’ has become the object of intense economic research recently.

⁴⁸ See *Southwest Airlines* (2000: 14f).

⁴⁹ *Martin*, for example, argues that many traditional airlines still cling to the obsolete and dangerous notion of air travel being an élite form of travel instead of a mass market. See *Martin* (2002: 13).

⁵⁰ See *Petzinger* (1995: 460).

⁵¹ The underlying reasons behind the fractional ownership boom are the, compared to airline travel, greatly increased flexibility and comfort, significant time-savings (at airports) as well as the perceived higher security level (an important post-9/11-effect). For a survey of fractional ownership growth trends and a detailed discussion of its advantage and disadvantages see *aerokurier-online* (1999), *Andersen* (2001).

SWA's Impact on Fares and Passenger Volumes

The literature we reviewed offers several distinct definitions of the 'Southwest effect' and alternative methodologies to quantify it. All these differences apart, there is widespread consensus that SWA has been the single most important stimulus of competition in the post-deregulation US airline industry and that its impact has been growing substantially since the early 1990ies, in parallel with the carriers' ongoing network expansion to cover an ever larger portion of the nation's prime aviation markets.

Initially the term 'Southwest effect' was used to describe the positive change in the number of enplanements plus the induced decrease of the average fare at the airports and/or on the specific markets SWA had entered.⁵² In a 1996 study, the United States Department of Transportation identified three distinct facets of the 'Southwest effect' without, however, trying to quantify them or assess their importance relative to each other:

- The direct competitive effect – lower fares, higher passenger volumes – on the specific city-pair market, SWA has chosen to enter.
- The so-called 'halo'-effect with SWA's entry lowering fares at nearby airports.
- The role model-effect with SWA's successful business formula serving as a blueprint for newcomers, whose entry in other markets, in turn, has intensified competition there.⁵³

Vowles, in two recent studies, found, using regression analysis, a statistically significant effect of low-cost carriers (including SWA) on fare levels also at most neighboring airports⁵⁴ and of SWA's presence at one airport in multi-airport regions on fares in the affected area as a whole.⁵⁵ The latter paper includes 9 case studies revealing very interesting fare and enplanement trends. According to his calculations, after one year of service, SWA's entry had on average lowered fares on the 13 city-pairs to or from these multi-airport regions it served and for which his study contains data by 47 per cent (outliers: –11 per cent; –82 per cent), while passenger numbers increased by a mean of 2,064 per cent (outliers: +71 per cent; +7,025 (!) per cent).⁵⁶

⁵² See *Windle/Dresner* (1995); *Southwest Airlines* (2000);

⁵³ See *United States Department of Transportation* (1996: 5 and 11). – In 1993 the U.S. DOT had already commissioned a report on SWA's procompetitive impact in the regions it had served at that time. See *Bennett/Craun* (1993).

⁵⁴ See *Vowles* (2000).

⁵⁵ See *Vowles* (2001).

⁵⁶ Of course, passenger volumes exploded on routes with no non-stop air service before SWA's entry whereas its effect both on fare levels and enplanements was generally lower in markets already served by other low-fare airlines or, like Florida, characterized by a high percentage of price-sensitive leisure travellers. Amazingly enough, however, network carriers had provided air service between most of these city-pairs (although to and/or from different airfields) and/or regions before SWA's entry.

The most comprehensive and ambitious attempt so far to define and quantify the ‘Southwest effect’, is *Morrison’s* 2001 study.⁵⁷ Through disaggregation he distinguishes three different types of SWA’s competitive impact:

- Actual competition: SWA is a direct competitor on the route, with, as a result, both SWA’s and the incumbents’ passengers profiting from lower average fares.
- Adjacent competition: SWA operates on an adjacent route a significant proportion of consumers consider a good substitute for the incumbent’s offering.
- Potential competition: this includes incumbents’ fare reductions to deter SWA – already present at the airport in question or at a nearby facility – from entering new routes which would put the two carriers into actual or adjacent competition.

Using a simulation model, he estimates that, for entering new markets by undercutting incumbents by an average of 46.2 per cent,⁵⁸ SWA lower average fares translate into overall savings to US airline passengers of \$ 3.4 bn per year (figure for 1998). Further, he estimates the savings for consumers through the effects of other carriers lowering their fares in reaction to SWA’s actual, adjacent, and potential competition at another \$ 9.5 bn yearly – a grand total of \$12.9 bn or around 20 per cent of the entire industry’s 1998 annual revenues and slightly more than half of all fare savings having accrued to passengers after and because of airline deregulation.⁵⁹ Finally, he reckons that SWA is by now able to directly influence fares, as an actual and adjacent competitor, on 44.8 per cent of the domestic US market in terms of passenger miles flown. In addition to that, he ascribes to SWA a similar influence, as a potential competitor, on another 49.4 per cent of the market – in sum an amazing 94 per cent of the total.⁶⁰

Most interesting, however, is *Morrison’s* finding that some key routes between major US airports,⁶¹ among them a number of network carriers’ hubs, are (still?) beyond SWA’s reach. As we will argue below, this is due to the persistence of severe barriers to entry at some of these key markets. While SWA has in the mean time – the study is based upon 1998 data – entered three of them (Buffalo, Hartford, and Raleigh-Durham) and started to provide some adjacent competition to New York LaGuardia (a slot-constrained field) and Newark (a prime Continental hub) through its new service to Islip near New York City,⁶² these airports are:

- Atlanta (the principal Delta hub, with Delta facing some low-fare competition through Air Tran, however),
- Charlotte (a USAirways hub),
- Memphis and Minneapolis/St. Paul (both major Northwest hubs),

⁵⁷ See *Morrison* (2001). – It is partly based upon research presented before the US Senate in 1998 already. See *Morrison* (1998).

⁵⁸ See *ibid.*, p. 250.

⁵⁹ See *ibid.*, p. 239.

⁶⁰ See *ibid.*, p. 243.

⁶¹ See *ibid.*, p. 243 (footnote 6).

⁶² In addition, rapidly expanding JetBlue has offered low-fare service from its base at New York’s Kennedy Airport from 2000.

- Richmond,
- Philadelphia and Pittsburgh (the two principal USAirways hubs).

SWA's Impact on Air Service Quality

As shown in the preceding section, all studies on the 'Southwest effect' exclusively focus on SWA's impact on fare levels and passenger volumes. We therefore suggest to add another component to the 'Southwest effect' for a more complete picture – service quality as measured in the United States Department of Transportation's Air Travel Consumer Reports.⁶³ Since these statistics were published for the first time in 1987, SWA has, as mentioned above, consistently performed extremely well in all three categories: mishandled baggage, on-time performance, and overall customer satisfaction (number of complaints per 100,000 passengers), especially in the period from 1992-1996.

While still coming out regularly on top in overall customer satisfaction, some network carriers have more recently beaten SWA in the two other categories. More important, however, is the fact, that these statistics witness a steady decrease of the spread between individual carriers service standards – at generally higher levels of service quality. What is more, while SWA's product quality has remained constantly good over time, its unique combination of low-cost, low-fare *and* high-quality service made public by the Department of Transportation statistics has obviously forced the much more expensive network carriers to significantly clean up their act and improve their own performance.

Southwest's Strategies to Overcome Entry Barriers

Barriers to entry into an industry are generally defined as cost advantages incumbents enjoy over newcomers due to the fact that the former are already present in the markets the latter wish to serve.⁶⁴ As for the post-deregulation airline industry, it is widely held that effective barriers to entry may exist only due to infrastructure bottlenecks and as a result of strategic behavior by established carriers (in practice the distinction between both types of entry barriers may be much less clear-cut, since some infrastructure bottlenecks only exist due to strategic hoarding by incumbents).⁶⁵ We will discuss in this chapter how SWA managed to cope with these specific barriers to entry, and more importantly, were it failed to do so, and for what reasons. As SWA was founded in the pre-deregulation period, however, when some types of legal barriers to entry were a significant impediment even to intrastate airline competition also in fairly liberal Texas, SWA's home state, we will also discuss their impact on SWA.

⁶³ The most recent issues of the Air Travel Consumer Report are available for download at the United States Department of Transportation's homepage (<http://www.dot.gov/airconsumer>).

⁶⁴ For a general discussion on the economics of entry barriers see the seminal work by *Bain* (1956).

⁶⁵ For an overview see *Transportation Research Board* (1991: 134ff); *Knorr* (1998: 448f); *Kummer/Schnell* (2001).

Barriers to Entry in the Airline Industry

Legal Barriers

Potentially, there are four different types of legal entry barriers in the airline industry: ownership rules, operating licences, route-specific traffic rights, and perimeter rules at airports. While ownership restrictions still play an important role in international aviation policy⁶⁶ they have never been relevant for SWA, as a US carrier offering domestic services only. What is more, to be allowed to set up an airline, all countries require a formal operating licence be granted by their civil aviation authorities. This requirement, however, did not stand in the way of SWA's entry either. We will therefore not continue to discuss these issues.

Aside from still being extremely important barriers to entry into cross-border airline services, the requirement to obtain route-specific traffic rights was also the single most important impediment to domestic airline competition on the US market before deregulation.⁶⁷ They were issued by the Civil Aeronautics Board (CAB) for all intrastate services and by its state counterparts – such as the Texas Aeronautics Commission (TAC) or the California Public Utilities Commission (CPUC) – for all purely intrastate services. Newcomers, however, had to produce with their application for route authority credible evidence that their proposed service was necessary to meet pent-up demand so far neglected by the incumbent carrier(s), with the latter being in the position, however, to take, for strategic reasons, legal action against the decision by the authorities to grant any newcomer this so-called certificate of necessity and convenience. As for interstate services, the CAB refused to certificate⁶⁸ any new trunk carriers – i.e. a new competitor in the category of the major airlines such as American, Delta, Northwest, Continental, United, (late) Eastern etc. – aside from the 16 airlines which had obtained theirs as early as 1938, the year the CAB was established. In the 1950ies, after the majors had begun to withdraw from a significant number of short-distance city-pairs or to substantially reduce frequencies there, it reacted by creating a new airline category to fill this gap: 'local carriers', such as Alaska Airlines, Allegheny Airlines, Ozark Air Lines or Piedmont Airlines. In addition, 'Commuter airlines' and 'Supplemental Carriers' were certificated for non-scheduled air taxi and package tour-services respectively. With the exception of only three states – Texas, California, and Florida – state authorities were as restrictive as the CAB in granting intrastate route.

Even after deregulation so-called perimeter rules restrict entry to some important US airports – Washington National, New York LaGuardia, and Dallas Love Field – by forbidding revenue services either to destinations beyond a certain geographical distance⁶⁹

⁶⁶ See for example *Knorr/Arndt* (2002).

⁶⁷ For details see *Biedermann* (1982) and *Bailey/Graham/Kaplan* (1985).

⁶⁸ NB: Legally speaking, only the CAB was allowed to certificate an airline. In other words, all intrastate airlines permitted to operate within their home states boundaries by their respective state authorities, including SWA, did not have nor require the status of a (CAB-)certificated carrier. As we will discuss below, this distinction turned out to be of vital importance for SWA's successful implementation of its business model in the start-up phase.

⁶⁹ The thresholds for incoming and outgoing flights are 1,500 miles at LaGuardia and 1,250 miles at Washington National. See *U.S. General Accounting Office* (1996: 13). – Only recently have flights to/from Denver been exempted from the perimeter rule in force at LaGuardia. See *Transportation Research Board* (1999: 3-5).

or, in the case of Dallas Love Field, by permitting commercial flights to/from airfields in specific US states only.⁷⁰

Infrastructure Bottlenecks

The absence of legal barriers to entry is only one prerequisite for free, undistorted competition. At an increasing number of major airports, infrastructure bottlenecks – often the result of a command-and-control approach to infrastructure allocation and/or strategic behavior of incumbents which are in the legal position to control access to these facilities – stand in the way of new entrants. Basically, there are two sources of potentially anticompetitive infrastructure-related entry barriers:

- The lack of slots (at desirable times) due to insufficient runway capacity or strategic hoarding of available slots by incumbents,⁷¹ or
- the lack of access to vital ground facilities such as gates. This shortage may either be due to long-term exclusive use leases between airport operators and incumbent airlines – frequently granted by US airport operators in return for these carriers' willingness to shoulder a substantial share of the financial burden of these airports' expansion – or the bundling of facility access and specific ancillary services (such as ground-handling or maintenance) as a precondition imposed by the incumbent for entering into a subleasing agreement with a newcomer.⁷²

Strategic Barriers to Entry

Aside from the strategic (ab)use of infrastructure bottlenecks or the legal process, academic and non-academic research has identified a number of strategic barriers to entry into the airline industry.⁷³ In particular these are

- the incumbents' strategic use of the most important distribution channels (i.e. computer reservation systems CRS which may be subject to a display bias in favor of the incumbent)⁷⁴ and travel agencies (whose loyalty the incumbents may reward through higher commissions and overrides);
- loyalty schemes for passengers (frequent flyer programs); and
- (the threat of) price and non-price predatory action against newcomers.

⁷⁰ See below at subchapter 3.2.1.

⁷¹ For a detailed discussion of US slot allocation procedures see *Langner* (1995).

⁷² For details see *FAA/OST Task Force* (1999); *U.S. General Accounting Office* (1996: 13).

⁷³ See for many *Levine* (1987); *Weinhold* (1995); *United States General Accounting Office* (1996); *United States Department of Transportation* (1999); *Meyer/Menzies* (2000).

⁷⁴ In the US, all CRS are operated by major airlines: SABRE by American, APOLLO by United, WORLDSPAN by Delta and SYSTEM ONE by Continental, to mention just the most important ones.

Other Barriers to Entry

Other barriers to entry include on the one hand the need for newcomers to overcome their potential customers' lack of brand and product awareness through advertising. On the other hand, the flying public may be reluctant to use low-cost airlines for fear of perceived lower safety standards as compared to the major carriers. For example, many other no-frills carriers suffered cancellations, a significantly lower number of new bookings, and substantial decline of their share prices after the fatal May 1996 crash near Miami of a DC-9 operated by the low-cost airline ValuJet (which, in turn, even went out of business as a result).⁷⁵ By contrast, established full-service carriers with well-known brands like USAirways (with a series of five deadly crashes between 1991 and 1995) did not see their business being seriously affected by accidents.

How Did SWA Overcome These Entry Barriers – and Where Did It Fail?

Legal Entry Barriers

In its start-up phase SWA faced a series of legal hurdles in three areas – route authority, airport selection, and perimeter rules –, more often than not erected by incumbent carriers trying to prevent their new competitor from getting off the ground.⁷⁶

Route Authority

Having filed the documents to incorporate the airline on March 15, 1967, and having obtained the operating licence soon after, SWA applied for traffic rights between three Texas cities – Dallas, Houston, and San Antonio – with the TAC on November 27, 1967. They were granted on February 20, 1968. On February 21, 1968, however, local incumbents Braniff, Trans Texas (later to become Texas International), and Continental obtained a temporary restraining order from the courts on the grounds that the markets SWA wanted to serve were already saturated. After lengthy legal proceedings – which ended in late 1970 (!) when the U.S. Supreme Court refused to hear the case, after the Texas Supreme Court had been the first court to rule in SWA's favor – SWA came out the winner. Braniff and Trans Texas, however, (unsuccessfully⁷⁷) filed another complaint, this time with the CAB, the body regulating interstate airline services only, to prevent SWA from finally taking off. They imaginatively argued that SWA was not an intrastate carrier, and hence outside the TAC's legislation, since some of SWA's passengers might connect with other (CAB-certificated) carriers to travel on to destinations outside Texas. Finally, two days before SWA's scheduled first flight on June 18, 1971, the two carriers had obtained another restraining order from a lower Texas court, arguing that SWA's had deviated from the original operating plan the TAC had approved. On June 17, 1971, the Texas Supreme Court, however, ordered that restraining order to be dissolved, too.

⁷⁵ In the meantime ValuJet took over Air Tran, under whose brand name it has operated ever since.

⁷⁶ See *Freiberg/Freiberg* (1996: 15ff) and *Petzinger* (1995: 27ff) for a more detailed history of SWA's start-up phase.

⁷⁷ After the CAB had refused to follow the two carriers' line of reasoning, the Court of Appeals in the District of Columbia also rejected the plea. See *Petzinger* (1995: 29).

The main effect of the legal controversies on SWA was that the company only narrowly escaped bankruptcy in their course. Not only did they deprive SWA of commercial revenues for almost four years. More important still, the legal expenses it had to incur had more than depleted SWA's financial assets (\$ 543,000 at the date of its incorporation); in January 1971, with only \$ 142 (!) left in the bank, SWA had accumulated liabilities of around \$ 80,000⁷⁸ – unsurprisingly so, since SWA, given the uncertain outcome of the trials, had been unable to attract any new investors before the U.S. Supreme Courts' final decision.

Airport Selection and Perimeter Rules

In June 1972, a suit was filed against SWA by the cities of Dallas and Fort Worth as well as the Regional Airport Board for its refusal to move its operations from Dallas Love Field to the new Dallas-Fort Worth Regional Airport (DFW). The construction of the new airfield had primarily been financed by municipal bonds which contained the provision that all 'certificated' carriers serving Love Field would instead have to use the new facilities after its completion. SWA, having moved its Houston operation from remote Houston Intercontinental airport to Hobby Field in downtown Houston in late November 1971 – and experiencing a spectacular boost in load factors as a result, rendering the route SWA's first big moneymaker – successfully argued before the courts that the provision in question exclusively referred to (CAB-)certificated (interstate) carriers, but not to intrastate operations under TAC jurisdiction like its own.⁷⁹

After deregulation took effect in 1978, SWA immediately applied for interstate route authority – to New Orleans –, only to run into the opposition of former DFW supporters again, among them Fort Worth congressman Jim Wright. Though incompatible with the spirit of the Airline Deregulation Act 1978, he managed to persuade a majority of the U.S. Congress to support his so-called Wright Amendment of 1979. This piece of legislation, which, slightly modified by the Shelby Amendment, is still in effect today, although it was recently held to be illegal by the U.S. Department of Transportation,⁸⁰ bans any airline from offering any nonstop or through-plane interstate revenue service out of Dallas Love Field except to airports in the four neighboring states of Texas: Arkansas, Louisiana, New Mexico, and Oklahoma; the Shelby Amendment later added the states of Mississippi and Alabama. While being a negligible impediment to SWA's expansion and competitiveness during its first three decades of operation, it has prevented the airline so far from expanding into the long-haul market⁸¹ from its Dallas base, thereby putting it at a clear disadvantage vis-à-vis its DFW-based competitors in its very home market.

⁷⁸ See *Freiberg/Freiberg* (1996: 19).

⁷⁹ See *Petzinger* (1995: 31).

⁸⁰ See *FAA/OST* (1999: 24). – In late 1998 the U.S. Department of Transportation issued an order allowing airlines to serve any US city out of Dallas Love Field provided aircraft capacity does not exceed 56 seats. A complaint against this ruling filed by American Airlines is still pending. For details see *American Bar Association* (2000: 7).

⁸¹ Aside from the aforementioned long-haul services from the East Coast to Phoenix, SWA has recently introduced transcontinental services from Chicago Midway to several airfields in California. See *Southwest Airlines* (2002d).

Infrastructure Bottlenecks

Quick turnaround times, a high average daily fleet utilization and high frequency service on its routes being three key ingredients of SWA's outstanding overall productivity, the carrier de rigueur had to concentrate its operation on secondary and uncongested airports. Given the abundance of underutilized airfields in all major US population centers, scarcity of slots, as of now, has never been an important entry barrier for the airline or an impediment to its expansion into any geographical area.

A different picture, however, emerges with respect to ground infrastructure bottlenecks, i.e. gate-constrained airports, some of which SWA had in vain tried to enter. Northwest's Minneapolis hub is a case in point. At this airport, all 70 gates have been leased to incumbents under exclusive use agreements, 54 of them to Northwest. While 32 of these 70 gate leases, beginning in 1999, have been subject to gradual conversion from exclusive use to preferential use (by their current exclusive lessee), the first 22 leases of the remaining 38 gate will expire only in 2015.⁸² All carriers wishing to serve this airport – newcomers as well as incumbents wanting to increase their market presence – will therefore have to conclude a sublease agreement with Northwest or any other incumbent (i.e. more often than not with Northwest). In order to obtain the gates SWA needed to commence service to Minneapolis, Northwest insisted in its proposed sublease agreement that SWA use Northwest's staff only for all ground-handling services.⁸³ As, given Northwest's staff lower productivity and the obvious conflicting loyalties this arrangement would have inevitably produced, that condition would have put SWA at a clear competitive disadvantage vis-à-vis Northwest, SWA decided not to enter the Minneapolis market (and most other gate-constrained airports as well) until today.

Strategic Entry Barriers

Above we identified three possible strategic barriers incumbents might use to deter newcomers from entering the industry and/or specific markets: control of the main distribution channels, loyalty schemes for passengers and (the threat of) predatory action.

Distribution Channels

The increasing number of internet bookings notwithstanding, airlines have traditionally relied on the intermediation of travel agencies to distribute the bulk – around 80 to 90 per cent⁸⁴ – of their tickets. Travel agencies, in turn, usually subscribe to one of the airline-operated CRS for flight and fare information and for automated booking. While the (airline) operators earn a fee from the airlines for every reservation made on their system, airlines also pay a commission to travel agencies for every booked flight. Apart from standard commissions, most airlines offer so-called override commissions as a special incentive to those travel agencies which generate a high (pre-set) volume of annual revenues for the carrier in question. Ticket distribution costs, including

⁸² See *U.S. General Accounting Office* (1999: 17).

⁸³ See *U.S. General Accounting Office* (1996: 13).

⁸⁴ See *Grant* (1996: 179); *Bouvard/Somosi* (1997: 173).

overrides, via travel agencies hence typically range between 17 to 25 per cent of the ticket price.⁸⁵

While the commercial importance of non-discriminatory access to CRS and travel agencies should not be underestimated, SWA proved that these distribution channels are not as relevant for an airline's survival as previously thought. In May 1994, both United's APOLLO and Continental's SYSTEM ONE, after setting up their own low-cost subsidiaries (Shuttle by United and Continental Lite) to directly compete with SWA, disabled the highly important automated ticketing function for all SWA flights.⁸⁶ What is more, Delta downgraded SWA on its WORLDSPAN CRS after the airline had entered Delta's Salt Lake City hub following its acquisition of Morris Air. Although already selling a significant portion of its tickets at that time (around 45 per cent) directly, it is obvious that SWA had to react to this ouster with a comprehensive strategy to diversify its distribution channels in order to remain in business:⁸⁷

- As an interim solution, SWA created a simplified CRS of its own – SWAT (Southwest Airlines Air Travel), for direct access and ticketing –, connecting its fifty highest-volume travel agencies to the new system.
- Guaranteed overnight ticket delivery was introduced for the around 300 next largest travel agencies doing business with SWA.
- The Ticket-by-Mail-service for direct customers who had booked at one of SWA's phone reservation centers was sped up to a guaranteed three-day delivery.
- A new phone reservation center was opened at Little Rock.
- Systemwide ticketless travel was introduced on January 31, 1995; in addition, SWA became the first US airline to offer (ticketless) on-line booking on its homepage.
- As of May 1, 1995, it negotiated a no-frills access, called BASIC SABRE, to American's SABRE CRS for travel agencies and direct customers (American had long pursued a strategy of coexistence with SWA in their joint Dallas home market, focussing on flow traffic, i.e. on connecting medium- to long-haul and premium passengers, and leaving the short-haul market largely to SWA).⁸⁸

Through this plethora of defensive actions SWA not only significantly reduced its dependence on its principal competitors' CRS. Much more important, it also managed to substantially lower its own distribution costs by innovations the competition has still found unable to fully harness, thereby strengthening its cost leadership position even more.⁸⁹

⁸⁵ See *Bouvard/Somosi* (1997: 173); *Pappas* (2001: 50).

⁸⁶ See *Southwest Airlines* (1995: 13); *Freiberg/Freiberg* (1996: 136).

⁸⁷ See *Southwest Airlines* (1995: 6, 13 and 19).

⁸⁸ See *Bartkin/Hertzell/Young* (1995: 86). – In 1993, when SWA had decided to enter California, American immediately scaled down its local short-haul operation to avoid a direct confrontation with SWA. See *Petzinger* (1996: 458).

⁸⁹ Generally speaking, direct selling of tickets by the airline instead of using intermediaries cuts distribution costs by half. Direct selling by the carrier on the internet reduces these costs by at least around another 50 per cent. See *Pappas* (2001: 50).

By contrast, SWA cited Northwest's override policy as the decisive factor in its decision to withdraw from the Detroit-Indianapolis market in the mid-1990ies – one of the extremely rare cases it ever withdrew service –, after local travel agencies' booking patterns had substantially shifted in Northwest's favor as a result.⁹⁰ Although this was the only known such incident, it cannot be ruled out, given SWA's (and other low-cost carriers') conspicuous absence from two of Northwest's three main hubs – Minneapolis and Memphis – and its relatively small presence at Northwest's third hub in Detroit – that the combination of an aggressive override policy and Northwest's dominance of gates at its hub airports has proved to be an insurmountable barrier even for SWA.^{91, 92}

Loyalty Schemes

Frequent flyer programs are generally considered to be the powerful marketing tool to boost passenger loyalty by rewarding frequent travellers not only with 'free travel' – although actually those awards do not come free for the recipient but simply form another type of discount – and other amenities such as lounge access, waiting-list priority, preferred check-in etc. Usually, full-fare tickets earn their holders a multiple of the mileage available in return for flying on discount fares (with some discount fares being not eligible at all for mileage accrual). What is more, airlines try to steer bookings to specific flights by offering their loyalty program members bonus miles on top of the regular mileage. As a result, all those passengers who do not have to pay for their own travel but who are in the position to redeem their frequent flyer awards for private purposes – i.e. most passengers travelling on a corporate budget –, do not have the incentive to use, all other things being equal, the least expensive airline. Instead they will choose the fare/airline that will earn them the maximum mileage possible for any given itinerary – and will therefore not normally travel on a low-cost low-fare carrier even though this would mean significant savings for their companies. In order to solve this principal-agent problem, more and more corporations, however, demand that their employees surrender all frequent flyer benefits earned on business trips or to use the lowest fare available. Finally, award tickets privately used by employees that result from travel paid for by the companies, are now widely considered to be a specific form of non-wage income – subject to income tax.

Even for the airlines, frequent flyer programs are a two-edged sword. While indeed increasing passenger loyalty, they are a very expensive marketing tool. Aside from substantial administration costs, airlines incur huge (opportunity) costs for on average having to reserve around 10 per cent of their capacity for passengers wishing to redeem their mileage for 'free' flights. In addition to the aforementioned developments, the loyalty schemes' attractiveness and hence their anticompetitive potential has further declined because of

- the introduction of ever more restrictions for the use of 'free' award tickets, such as stricter blackout dates during periods of peak demand (holidays, special events etc)

⁹⁰ See *U.S. General Accounting Office* (1996: 16).

⁹¹ This might also in part explain *Morrison's* findings that some major US airports still lack low-fare service. See *Morrison* (2001: 243).

⁹² Before the new exclusive Northwest terminal at Detroit airport was opened in early 2002, Northwest used 56 of the 81 jet gates available there under an exclusive use lease arrangement, aside from regularly using another 6 gates. See *U.S. General Accounting Office* (1999: 19).

- when travel on award tickets is disallowed or these are issued only if a substantially higher amount of mileage credit is surrendered by the passenger;
- the need to book award travel well in advance, due to the above-mentioned restrictions and, given their still increasing popularity in terms of membership figures, the ever fiercer competition among frequent travellers themselves for the limited number of 'free' seats on every flight; and
- the decision by most US carriers to honor accumulated mileage for good⁹³ (before, unused mileage credit would typically expire after an average of three years). This, in turn, relieves passengers from the need to earn as many miles as fast as possible on the airline in question (and its program partners) to obtain the award they desire.

While SWA, as mentioned above, did create, in 1987, a frequent flyer program of its own – now known as Rapid Rewards –, its operation is vastly different from industry standards in some crucial aspects, as well as for its simplicity.⁹⁴ Most importantly, award tickets do not require the accrual of a specific pre-determined amount of mileage but a minimum number of trips flown per year – à la buy eight (round trips), get one (round trip) free. What is more, aside from defining only a very small number of black-out dates, the company does not set aside capacity for award travellers. Instead it allocates all available seats on a first come, first served basis, i.e. it does not discriminate between award travellers and revenue passengers in the booking process. In sum, these features allow SWA to offer its most loyal customers all the benefits of a full-fledged frequent flyer scheme – with, for SWA being a purely domestic airline, the exception of international award travel – in a much more cost-effective manner in comparison to its competitors.

(Threat of) Predatory Action

Predation is defined as an incumbent's attempts to drive *more efficient* actual competitors out of the market, or to coerce them into accepting the incumbent's price leadership, or to deter potential competitors from entry, either by temporarily charging consumers prices below (variable) costs ('predatory pricing') or by artificially raising rivals' costs, with the objective of defending or conquering a dominant position – and the monopoly profits associated with it – on the market in question. In other words, if the predator prevails, this outcome is not the result of its superior efficiency but of its ability to abuse its market power – with, in the end, detrimental consequences for consumers who will have to bear all the negative effects of the ensuing monopoly. While some economic schools of thought, most notably the Chicago School of Antitrust Analysis, dismiss predation as an irrational strategy for any company to pursue, more recent research, based on game theory and the theory of industrial organization, has clearly demonstrated that predatory pricing may indeed be a viable option for incumbents,⁹⁵ if

- the market in question is characterized by substantial barriers to entry, and

⁹³ Some airlines require their passengers to accumulate mileage at least once in three years lest they lose their credit after this period.

⁹⁴ See *Southwest Airlines* (2002e).

⁹⁵ See, for example, *Ordover/Saloner* (1989), *Milgrom/Robert* (1990), *Roth* (1995) and *Lott* (1999) for a detailed discussion of the economics of predation.

- recoupment of the losses incurred due to temporary predatory pricing is possible (either by later charging monopoly prices or by overcharging consumers on other markets the incumbent also serves and where it does not face effective competition (so-called multi-market recoupment)).

The allegedly increasing number of incidents of predatory behavior in the US airline industry has not only become the object of scholarly research recently.⁹⁶ It has also prompted the United States Department of Transportation to draft, based upon in a 1998 white paper (revised in 1999)⁹⁷ an “enforcement policy regarding unfair exclusionary conduct in the air transportation industry”⁹⁸ so as to protect start-up airlines against unfair competitive practices by incumbents. Also, the Department of Justice filed an anti-trust complaint against AA – unsuccessfully so, for failure to convincingly prove its accusations.⁹⁹

While predatory behavior is notoriously hard to prove (for lack of comprehensive cost and fare data of both airlines involved, for the intricacies of the diverse cost and recoupment tests, and for the tremendous difficulty of proving predatory intent), SWA’s own history offers some very interesting lessons, both with regard to possible types of predation in the airline business and how to counter them.

While only narrowly surviving price and non-price predation attempts by incumbents in its start-up phase, SWA, however, unlike many other smaller low-cost carriers has not been the object of such practices for many years. This is because incumbents learned from experience that, as a result of SWA’s specific business model, predatory action against the carrier would normally fail – and prove extremely costly for them. SWA’s reputation as being rather immune to predation rests upon the following pillars:¹⁰⁰

- Historical precedent: In February 1973, incumbent Braniff attacked SWA by cutting its one-way fare between Dallas and Houston – then SWA’s only profitable market – by 50 per cent to \$ 13. Aside from playing the David-vs-Goliath card in its advertising and in the media, SWA reacted by offering its passenger a choice of two fares: \$ 13 with the standard no-frills service, or \$ 26 *including* a free bottle of liquor (that did not have to be consumed on board). Initially, 76 per cent of all passengers, most of them businesspeople travelling on expenses, choose the latter option, temporarily rendering SWA the biggest distributor of spirits in Texas.¹⁰¹
- Having evolved into the most consistently profitable US airline as well as the industry’s undisputed cost leader, SWA, in the meantime, has the resources to sustain a price war for an even longer period than the established network carriers (as demonstrated by SWA’s success in fending off even their low-cost subsidiaries).

⁹⁶ See *Morrison/Winston* (2000: 7ff); *Oster/Strong* (2001).

⁹⁷ See *United States Department of Transportation* (1998 and 1999).

⁹⁸ See *United States Department of Transportation* (2001).

⁹⁹ All pertinent legal documents are available at Americans’s (<http://www.aadoj.com>) and the United States Department of Justice’s homepages (<http://www.usdoj.gov/atr/cases/indx199.htm>).

¹⁰⁰ See *U.S. Department of Transportation* (2001: 29); *Oster/Strong* (2001).

¹⁰¹ See *Southwest Airlines* (1997: 10); *Freiberg/Freiberg* (1996: 33).

- Whereas many low-fare start-ups offer a small number of daily round trips only, SWA usually enters a new market with high-frequency service. As a result, it would be prohibitively costly for incumbents to apply a 'bracketing' strategy against SWA. ('Bracketing' means that incumbents schedule additional flights closely around the new entrants' departure times and match or even undercut its fares on just these flights while maintaining their normal fares on all other flights to the new entrants' destination(s)).
- More often than not, incumbents offered connecting or throughplane service only, hence competing with an inferior product against SWA's nonstop service.
- Serving 59 airports in most parts of the USA, SWA directly or indirectly competes in many geographical markets with the network carriers. This multi-market contact would allow SWA to retaliate over a broad range of city-pairs, thus creating strong incentives for network carriers not to engage in predation against SWA in the first place.

Other Barriers to Entry

SWA's excellent advertising, its cultivation of an underdog image until today and its frequent media presence – ironically in part due to TV and press coverage of its competitors' manifold legal actions against its operation –, helped the carrier to early establish a high media profile and a distinct brand at least in the regions it served. What is more, its lastingly outstanding safety record, which, on all counts, has topped the established network carriers' performance, has become another important determinant of the carriers' extraordinary competitiveness.

Conclusions

SWA's is not the only low-cost business model in the airline industry – AirTran, for example, is in effect competing against Delta in Atlanta by emulating its a hub-and-spoke model; JetBlue is operating from New York's busy and high-cost JFK airport –, but so far by a wide margin the most consistently successful one. What is more, SWA flourished although (or rather because?) it defied "every success maxim of the post-deregulation world":¹⁰² the alleged need to erect strategic barriers to entry by establishing a hub-and-spoke operation, by using sophisticated yield management techniques, by relying on CRS and travel agents as the principal distribution channels, and by creating passenger loyalty by means of a frequent flyer scheme. While indeed savvily adopting some very basic versions of these tools, as the company saw fit, it never abandoned its original business formula, refining it instead by adding said features to its product. In other words, the SWA story not only demonstrates that the effectiveness of strategic barriers to entry has long been overestimated by economists, airline professional, and policymakers alike. On the contrary, it clearly proves that infrastructure bottlenecks – which, in turn, are overwhelmingly caused or at least amplified by ill-designed allocation rules and access regulations – must be considered the only effective barrier to entry in the airline industry. Not only do they shield inefficient incumbents directly from lea-

¹⁰² *Petzinger* (1995: 319).

ner competitors. Even more important, experience has shown that established carriers can only erect meaningful strategic entry barriers upon this base.

SWA's early success on the intrastate market in Texas not only served as a blueprint for the Airline Deregulation Act 1978. The company has also turned out to be only lasting success story of the post-deregulation era in the USA. For it (and the entire 'low cost service revolution') to continue, policymakers must therefore do their utmost to ensure non-discriminatory infrastructure access in the future.

Bibliography

- aerokurier-online. (1999). „FACTS – Bestand Fractional Ownership Flugzeuge”. (November 24, 1999). (www.aerokurier.rotor.com/akDaten/Aefracte.htm).
- Air Transport Association. (2002a). *2002 State of the U.S. Airline Industry. A Report On Recent Trends For U.S. Air Carriers*. Washington DC.
- Air Transport Association. (2002b). *Annual Report 2001*. Washington DC.
- American Bar Association. Section of Public Utility, Communications and Transportation Law. (2000). *Report of the Aviation Committee. 2000 Spring Council Meeting*. Washington DC.
- Andersen. (2001). *Business aviation in today's economy: A guide to the analysis of business aircraft uses, benefits and effects on shareholder value*. White Paper Series No 9. (www.andersen.com/website.nsf/contents/IndustriesProductsBusinessTravelForum!OpenDocument).
- Bailey, E./Graham, D./Kaplan, D. (1985). *Deregulating the Airlines*. Cambridge (Mass.).
- Bain, J. (1956). *Barriers to New Competition*. Cambridge (Mass.).
- Barkin, T./Hertzell, O.S./Young, S. (1995). “Facing low-cost competitors. Lessons from US airlines”. *The McKinsey Quarterly*. Vol. 1 (4): 87-99.
- Bennett, R.D./Craun, J.M. (1993). *The Airline Deregulation Evolution Continues. The Southwest Effect*. Washington DC.
- Biedermann, P. (1982). *The U.S. Airline Industry – End of an Era*. New York.
- Bouvard, F./Somosi, A. (1997). “Europe’s airlines choose between two ticket distribution strategies”. *The McKinsey Quarterly*. Vol. 3 (1): 173-177.
- Cameron, D. (2001). “Air turbulence could mean a bumpy ride for investors“. *Financial Times (European Edition)*. (September 19, 2001): 17.
- Doganis, R. (2001). *The airline business in the 21st century*. London and New York.
- Done, K. (2001). “Tried, Tested and ahead“. *Financial Times (European Edition)*. Supplement World’s Most Respected Companies. (December 17, 2001): VII.
- FAA/OST Task Force. (1999). *Airport Business Practices and Their Impact On Airline Competition*. Washington DC.
- Flug Revue. (2002). „News Luftfahrtindustrie”. No 4. (April 2002): 25.
- Freiberg, K./Freiberg, J. (1996). *NUTS! Southwest Airlines‘ Crazy Recipe for Business and Personal Success*. Austin.
- Grant, B. (1996). “Trends in US airline ticket distribution”. *The McKinsey Quarterly*. Vol. 2 (4): 179-184.
- Gudmundsson, S. (1998). “New-entrant airlines‘ life-cycle analysis: growth, decline and collapse“. *Journal of Air Transport Management* 4: 217-228.

- Knorr, A. (1998). „Zwanzig Jahre Deregulierung im US-Luftverkehr – eine Zwischenbilanz“. *ORDO* 49: 419-464.
- Knorr, A./Arndt, A. (2002). „Entwicklungstendenzen im Weltluftverkehr und deren Auswirkungen auf den Verkehrsmarkt“. in: *DVWG (Hrsg.): Europäischer Luftverkehr - wem nützen die strategischen Allianzen?*. Schriftenreihe B der Deutschen Verkehrswissenschaftlichen Gesellschaft e.V. Band 246. Bergisch Gladbach: 7-20.
- Kummer, S./Schnell, M. (2001). *Strategien und Markteintrittsbarrieren in europäischen Luftverkehrsmärkten: Theorie und neue empirische Befunde*. Schriftenreihe D der Deutschen Verkehrswissenschaftlichen Gesellschaft e.V. Heft 70. Bergisch Gladbach.
- Langner, S. (1995). “Contractual aspects of trading slots in the United States”. *Journal of Air Transport Management* 2: 151-161.
- Lawton, T. (2000). “Flying Lessons: Learning From Ryanair’s Cost Reduction Culture”. *Journal of Air Transportation World Wide* 5 (1): 89-106.
- Levine, M. (1987). “Airline Competition in Deregulated Markets: Theory, Firm Strategy and Public Policy”. *Yale Journal on Regulation* 4: 393-493.
- Lewis, P. (2002). “Southwest to add 737s”. *Flight International*. (January 1-7): 7.
- Lott, J. (1999). *Are Predatory Commitments Credible?: Who Should the Courts Believe?* Chicago.
- Martin, P. (2002). “Travelling with excess baggage”. *Financial Times (European Edition)*. (January 8, 2002): 13.
- Mason, K. (2000). “The propensity of business travellers to use low cost airlines“. *Journal of Transport Geography* 8: 107-119.
- Mason, K. (2001). “Marketing low-cost airline services to business travellers“. *Journal of Air Transport Management* 7: 103-109.
- Meyer, J./Menzies, T. (2000). “The Continuing Vigil. Maintaining Competition in Deregulated Airlines Markets”. *Journal of Transport Economics and Policy* 34. Part 1: 1-20.
- Milgrom, P./Roberts, J. (1990). “New Theories of Predatory Pricing”, in: Bonanno, G./Brandolino, D. (eds.): *Industrial Structure in the New Industrial Economics*. Oxford: 115-137.
- Morrison, S. (2001). “Actual, adjacent, and Potential Competition. Estimating the Full Effect of Southwest Airlines”. *Journal of Transport Economics and Policy* 35: 239-256.
- Morrison, S. (1998). *New Entrants, Dominated Hubs, and Predatory Behavior. Statement before the Subcommittee on Aviation. Committee on Commerce, Science, and Transportation. U.S. Senate*. Washington DC. (April 23, 1998).
- Morrison, S./Winston, C. (2000). “The Remaining Role for Government Policy in the Deregulated Airline Industry”, in: Peltzman, S./Winston, C. (eds.): *Deregulation of Network Industries. What Next?*. Washington DC: 1-40.

- Ordover, J./Saloner, G. (1989). "Predation, Monopolization and Antitrust", in: Schmalensee, R./Willig, R. (eds.): *Handbook of Industrial Organization*. Amsterdam: 537-596.
- Oster, C./Strong, J. (2001). *Predatory Practices in the U.S. Airline Industry*. (January 15, 2001). (ostpxweb.dot.gov/aviation/domestic-competition/).
- Pappas, G. (2001). "The impact of the internet on the airline industry", in: Euromoney Yearbooks (ed.): *Airfinance Annual 2000/2001*, London: 49-52.
- Petzinger, T. (1995). *Hard Landing*. New York.
- Richter, J./Wolf, C. (2002b). „Unfall-Statistik. Wie sicher ist meine Fluggesellschaft?“. *AERO international*. No 3. (März 2002): 86-87.
- Roth, T. (1995). "Predation, Cost-Based Tests and Predatory Intent". *Journal of Legal Economics* 5: 35-47.
- Rubython, T. "The difference is winning". *EuroBusiness* 3, No. 7. (December 2001): 24-26
- Ryanair. (2001). Annual Report & Financial Statement 2001. Dublin. (www.ryanair.com).
- Southwest Airlines. (1995). *Annual Report 1994*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (1996). *Annual Report 1995*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (1997). *Annual Report 1996*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (1998). *Annual Report 1997*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (2000). *Annual Report 1999*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (2001). *Annual Report 2000*. Dallas. (www.southwest.com/about_swa/annual_reports.html).
- Southwest Airlines. (2002a). *Southwest Airlines Reports Fourth Quarter Earnings and 29th Consecutive Year of Profitability*. News Release, Dallas. (January 17, 2002). (www.southwest.com/about_swa/press/prindex.html).
- Southwest Airlines. (2002b). *Southwest Airlines Fact Sheet (Updated March 4, 2002)*. Dallas. (http://www.southwest.com/about_swa/press/factsheet.html).
- Southwest Airlines. (2002c). *Southwest Airlines Declares 102nd Consecutive Quarterly Dividend*. News Release. Dallas. (January 17, 2002). (www.southwest.com/about_swa/press/prindex.html).
- Southwest Airlines. (2002d). *Southwest Announces Further Growth Plans; Airline Plans More New Flights for June*, News Release. Dallas. (March 13, 2001). (www.southwest.com/about_swa/press/prindex.html).
- Southwest Airlines. (2002e). *About Rapid Rewards*. Dallas. (www.southwest.com/rapid_rewards/about_rr.html).

- The Economist. (2001). "Low-cost airlines: No frills, plenty of promise". (November 3, 2001): 69.
- Transport Research Board. National Research Council. (1991) *Winds of Change. Domestic Air Transport Since Deregulation*. Washington DC.
- Transport Research Board. National Research Council. (1999) *Entry and Competition in the U.S. Airline Industry: Issues and Opportunities*. Washington DC.
- U.S. Department of Transportation. (Several years). *Air Travel Consumer Report*. Washington DC. (www.dot.gov/airconsumer).
- U.S. Department of Transportation. (1998). *Competition in the U.S. Domestic Airline Industry: The Need for a Policy to Prevent Unfair Practices. Revised*. Washington DC. (August 1998).
- U.S. Department of Transportation. (1999). *Competition in the U.S. Domestic Airline Industry: The Need for a Policy to Prevent Unfair Practices. Revised*. Washington DC. (May 1999). (<http://ostpxweb.dot.gov/aviation/domestic-competition/>).
- U.S. Department of Transportation. *Enforcement Policy Regarding Unfair Exclusionary Conduct in the Air Transportation Industry. Findings and Conclusions on the Economic, Policy, and Legal Issues (Docket OST-98-3713)*. Washington DC. (January 2001). (ostpxweb.dot.gov/aviation/domestic-competition/).
- U.S. Department of Transportation, Office of the Assistant Secretary for Aviation and International Affairs. (1996). *The Low Cost Airline Service Revolution*, Washington DC.
- U.S. General Accounting Office. (1996). *Airline Deregulation. Barriers to Entry Continue to Limit Competition in Several Key Domestic Markets (GAO/RCED-97-4)*, Washington DC. (October 18, 1996).
- U.S. General Accounting Office. (1999). *Airline Deregulation. Changes in Airfares, Service Quality, and Barriers to Entry (GAO/RCED-99-92)*. Washington DC. (March 4, 1999).
- Vowles, T. (2001). "The "Southwest Effect" in multi-airport regions". *Journal of Air Transport Management* 7: 251-258.
- Vowles, T. (2000). "The effect of low fare air carriers on airfares in the US". *Journal of Transport Geography* 8: 121-128.
- Weinhold, M. (1995). *Computerreservierungssysteme im Luftverkehr*. Baden-Baden.
- Windle, R./Dresner, M. (1995). "The Short and Long Run Effects of Entry on U.S. Domestic Air Routes". *Transportation Journal* 35 (2): 14-25.
- Woodyard, C. (2001). "United drops shuttle flights, low-fare model". *USAToday (Online Edition)*. (December 4, 2001). (www.usatoday.com/money/biztravel/2001-0-04-united-shuttle.htm).

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