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Strategic imperatives and the pursuit of quality in the US airline industry

Dawna L Rhoades, PhD, *Embry Riddle Aeronautical University*

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Author: Rhoades, Dawna L; Waguespack, Blaise, Jr

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Keywords Airlines, Quality, Strategic management, United States of America

Paper type Research paper

Introduction

Even before the US airline industry was struck by what the Air Transport Association (2002) has called "The Perfect Economic Storm" - economic recession, war, September 11, and Severe Acute Respiratory Syndrome (SARS) - a new model of air transportation was gaining ground on the traditional air carriers. Following the 1978 deregulation of the US airline industry, these traditional carriers created hub-and-spoke networks to funnel passenger traffic from smaller markets to a central node in a key major city where a bank of large planes waited

to be filled and flown on to another large central node city. The most successful carriers came to dominate their hub markets allowing them to exert greater control over pricing and capacity. Traditional carriers also developed frequent flyer programs to increase the switching cost of their customers and substantially adjusted service quality levels to 1 differentiate the different fare classes of ticketed passengers. Along with its hub and frequent flyer program, traditional US carriers developed elaborate systems to optimize revenue (or yield) that involved dividing the capacity on board each aircraft into a number of booking classes (up to 26 in some airlines). Each class was distinguished by the restrictions attached to it i.e. Saturday night stay, advance booking, fee for change, refund, etc. and the fare attached to that class (Shaw, 1999). Passengers were now ranked based on their service cost and return to the firm with top tier consumers receiving an "unprecedented level of personal attention" (Brady, 2000, p. 121). This traditional model is increasingly under attack because of "unprecedented pressure on prices, challenges to further cost cutting, the replacement of turboprops by more comfortable regional jets, and a change in flying habits since September 11" (Costa et al, 2002, p. 5). In particular, the business class passenger who often accounted for the majority of revenue generated by traditional carriers has begun to rebel against the high fare differential, restrictions on reservations, and lost time to security and hub routing. These high-yield passengers have decided that it "is one thing to charge a very high walk-up fare to a last minute business traveler in a hub city where the passenger at least gets a nonstop flight. It is another thing to ask for a fare of an order of magnitude higher than the deep discount fare and still force a passenger to go through a hub with the extra trip time involved, and the possibility of missed connections and lost baggage" (Taneja, 2003, pp. 78-9).

Since US airline deregulation over 200 carriers have started-up and failed, most while attempting to emulate the low-cost, no-frills model pioneered by Southwest Airlines (Taneja, 2003). A new model for airline operation is challenging the traditional carriers. The new low cost carrier (LCC) emerging in the USA is pursuing a very different vision of how to run an airline and succeeding. The LCCs have "made a series of decisions aimed at streamlining its business processes to produce the lowest possible operating costs" (Shaw, 1999, p. 83). In addition, these carriers have made careful decisions on the product features that consumers are willing (or not) to pay for when choosing an airline. They are attempting to position themselves between the traditional carriers and the no-frills Southwest-style carriers by pursuing a best value strategy increasingly aimed at business class passengers. The purpose of this paper is to explore the changing face of airline quality by analyzing the reported service and safety data for the traditional and low cost carriers. The strategic implications of this divergence will be analyzed to assess the long-term future of the industry.

Different models

In his book, *Airline Survival Kit: Breaking out of the Zero Profit Game*, Taneja (2003) lists the following characteristics that have shaped the airline industry as it exists today: Excessive government intervention, network-driven structure, organized labor, high labor, capital, and fuel intensity, high fixed and low marginal costs, high cyclically and seasonality, revenue vulnerability, destructive competition, commodity products, vulnerability to weather and infrastructure, uneven playing fields, and extremely variable planning horizon. In essence, airline revenues have been generated on a network basis in a market that is vulnerable to a number of factors out of the direct control of the airline (business cycles, weather, infrastructure, seasonality, etc.).

Meanwhile, costs are incurred on a flight segment basis and are highly sensitive to changes in fuel prices, labor and capital costs, infrastructure fees, and government intervention in the market. As a result, the global airline industry has not achieved a net profit in over five decades (Taneja, 2003). Analysts are predicting a "day of reckoning" that may spell the end of the traditional carrier (Zellner and Arndt, 2004; Weber, 2004). Drowning in debt, burdened with pension plans that they cannot fund, and unable to reduce labor costs by union contract, many of these carriers face bankruptcy and/or liquidation (Byrnes, 2004; Travel Biz, 2004).

One segment of the industry, however, is prospering - LCCs. The first of the LCCs was Southwest Airlines who began operation in 1971. Since deregulation, a number of carriers have attempted to emulate its model with

limited success. The basic features of the Southwest model are fleet commonality, high asset utilization, short turnaround times, low distribution costs, point-to-point service, and secondary airport utilization (Shaw, 1999). Until recently, few LCC start-ups have survived more than a few years without tying themselves to the franchise tail of a traditional carrier i.e. flying the spokes from small market cities into traditional carrier hubs. Today, however, this segment is rapidly gaining market share in the USA and abroad with its low cost, lower price service. It has been suggested that this segment could capture 40-50 percent of the US market in the near future (Haddad and Zellner, 2002; Velocci, 2002). The LCCs were certainly the only carriers expanding service and posting profits in the post September 11 environment (Bond, 2003; Haddad, 2003; Zellner, 2003). Given the fact that the stock value of Southwest Airlines alone now exceeds that of the combined top six, traditional carriers - American, United, Delta, Northwest, Continental, and US Airways - the future of the traditional carriers seems increasingly bleak. Table I presents the costs per available seat mile (CASM), revenue per available seat mile (RASM), and average fares for two traditional US carriers, United Airlines and US Airways, and two of the best performing LCCs, Southwest Airlines and JetBlue.

This new model of air transportation is itself diverging into two relative distinct groups of carriers. One group, typified by Southwest Airlines, represents the true no-frills carriers. These carriers rely on achieving the lowest possible costs allowing them to drive down prices and grow the market by attracting passengers that might otherwise drive to their destination. America West, once classified as a traditional carrier, is attempting to reposition itself as a successful discount carrier, but not a Southwest since it boasts of different fare classes and generous frequent flyer programs.

Two carriers that typify the newest model are AirTran and JetBlue. AirTran is now the second largest discount carrier in the USA after Southwest. Unlike Southwest, AirTran utilizes the traditional hub-and-spoke system to target business class rather than leisure passengers and offers these passengers the same amenities at up to 60 percent less than traditional rivals. The key to their current success has been to cut costs to the bone through lower salaries and reduced overhead (Haddad, 2003). JetBlue is also seeking to attract primarily business class passengers "by blending Southwest Airlines Co.-style efficiencies and low fares with cheeky promotions and such amenities as free live-satellite TV at every seat" (Zellner, 2003, p. 36). Like AirTran, JetBlue has dropped fares up to 40 percent of its traditional rivals while offering business class amenities.

Table I. Costs and revenues for selected carriers	Airline	CASM ^a	RASM ^a	Average fare (\$)
	United	10.92	10.93	198
	US Airways	12.28	12.07	119
	Southwest	7.50	8.61	88
	JetBlue	5.85	6.86	106

Note: ^a Expressed in cents per seat mile
Source: Airline Forecasts

Both of these carriers are trying to overcome the current US perception that air travel has become a commodity (Fraser, 1996). The reasons for this strategy are obvious. When consumers perceive no significant difference between the product or service offered by competitors, then competition becomes based on price. This phenomenon has led to a number of destructive price wars in the US airline industry and prompted some researchers to suggest that the core of the industry is empty (Button, 1996). According to Tesler (1987), an empty core is characterized by chaos and "price cutting is extreme, most firms in the industry are losing money, and yet it is plain that buyers want the product and are willing to pay higher prices than those currently prevailing".

One solution, of course, is to change this perception and create a branded product. Products can be branded on tangible features such as appearance or taste, but this type of branding tends to create only a short-lived marketing advantage. This has certainly been the case for airlines which have competed on seat comfort, seat pitch, and wine selection. These factors are relatively easy to imitate and raise short-term costs without creating long-term advantage. Psychological brand values such as pride, status, trust, environmental awareness or even fun, are more powerful and more difficult to imitate. The Southwest image of quirky ads and fun-loving

employees has proven difficult to copy. Whether the new carriers can carve out a sustainable brand image will be an important determinant of their long-term survival. At the present time, the new LCCs are attempting to stake out a position of best value using their lower operating costs to offset the cost of providing upscale amenities (Shaw, 1999). This change in LCC strategy may reflect the maturity of the US market and the established expectations of US travelers who have had over three decades to become accustomed to the price and basic reliability of Southwest (The Economist, 2004).

It is too early to tell if branding efforts will succeed. So far, the key to the LCC success has been aligning their costs and revenue structure (as shown in Table I) while striving to provide at least the basic service features demanded by consumers. Areas where US consumers appear unwilling to compromise are airline safety, punctuality, baggage delivery, interlining (automatic transfer to another carrier), and schedule (Shaw, 1999). Aside from these basic operational areas, carriers are focusing on improving service quality levels to appeal to business class passengers, providing more legroom, wider seats, assigned seating, and satellite television. Several studies have attempted to apply the SERVQUAL scale developed by Parasuraman et al. (1985) or the SERVPERF developed by Cronin and Taylor (1992) to the question of airline service quality (Alotaibi, 1992, Carman, 1990; Cronin and Taylor, 1992; Park and Robertson, 2004). While most of these efforts have modified the measure to reflect various aspects of airline service that they feel are important, in general they agree that reliability is a basic requirement on which the other dimensions of tangibles, responsiveness, assurance, and empathy build. These studies also show that there is a difference between actual and perceived performance and that perceived quality increased customer loyalty, carrier reputation, and intentionality to repurchase. These efforts provide a snapshot of airline quality and hint at the importance of branding and image in building a successful airline. In this study, we are interested in the longitudinal change in airline quality performance (safety and service) between traditional carriers and the LCC sector that has been gaining market share rapidly over the last decade. In order to answer this question, we have chosen to rely on complaint and safety data that have been collected and reported by the US Department of Transportation for a number of years.

Methods and results

Data for this study were collected for the Big Six US (traditional) carriers - American, United, Delta, Northwest, Continental, and US Airways - and seven low cost carriers - Southwest, JetBlue, ATA, AirTrans, Spirit, America West, and Frontier - for the period 1993 to 2002. Information on safety related events was obtained from the FAA Website and included accidents, incidents, near mid-air collisions, and pilot deviations. Service quality data were found in the Department of Transportation publication Air Travel Consumer Report. Data collected included customer complaints on flight problems, ticketing problems, refunds, fares, customer service, advertising, and other problems. This data set differs from the one used by Rhoades et al. (1998) and Rhoades and Waguespack (1999, 2004) since those studies dealt exclusively with major carriers for whom the Department of Transportation reports a wider range of data such as mishandled baggage, on-time performance, and denied boardings. In order to compare the major US carriers directly to their LCC counterparts, some of whom are not yet large enough to qualify as major carriers, we have confined our analysis to the consumer complaints that are reported for all US carriers on a monthly, quarterly, and yearly basis. Total yearly departures by carrier were obtained from the Bureau of Transportation Statistics and used to normalize the complaint and safety data to control for the size of the carriers involved.

A safety rate was calculated for each carrier by adding accidents, incidents, near mid-air collisions, and pilot deviations and dividing the total number by yearly departures. Tables II and III present the safety rates for traditional (major) and LCC carriers from 1996-2002. The average number of safety problems per departure is presented in the last row. The two prior rows display the 95 percent confidence interval. Rates bolded in the table fall outside the confidence interval limits. An examination of the two tables indicates that beginning in 2000 the rates for both groups are virtually identical. This is a positive finding for LCCs since prior research had shown that national and regional carriers as a group tended to post more safety problems than major carriers

(Rhoades and Waguespack, 2000).

The service rate was calculated by adding all complaint categories and dividing by yearly departures. Tables IV and V present the results of these calculations for 1996 to 2002. The last row presents the average complaints per departure for the two groups. Once again, the two prior rows show the 95 percent confidence interval. Rates italicized in the tables fall outside the confidence interval limits. A comparison of these two groups indicates that until 2002, LCCs as a group posted complaint rates considerably higher than their major carrier counterparts. Since the complaint rate deals primarily with issues of basic service, this presents a serious problem for a strategic group that seeks to achieve both the low-cost reliability of Southwest and the higher amenity level of the traditional carriers.

Airline	1996	1997	1998	1999	2000	2001	2002	2003	2004
ATA	0.000239	0.000195	0.000885	0.000303	0.000221	0.000179	0.000104	0.000071	0.000168
Airtran	0	0.000197	0.000353	0.000021	0	0.000027	0.000008	0.000034	0.000037
Frontier	0.000055	0.000141	0.000181	0.000031	0	0.000049	0.000020	0.000057	0.000028
AMWest	0.000053	0.000052	0.000039	0.000100	0.000065	0.000067	0.000040	0.000066	0.000035
SW	0.000035	0.000032	0.000048	0.000032	0.000030	0.000034	0.000034	0.000028	0.000035
JetBlue	0	0	0.000134	0	0.000039	0	0.000045	0	0.000033
Spirit	0.000186	0.000193	0.000149	0.000201	0.000146	0.000033	0.000059	0.000084	0.000024
Upper bound	-0.000043	0.000013	0.000031	-0.000038	0.000109	0.000109	0.000073	0.000078	0.000010
Lower bound	0.000072	0.000102	0.000090	0.000081	-0.000028	0.000018	0.000016	0.000022	0.000004
AVG					0.000059	0.000056	0.000044	0.000050	0.000052

Airline	1996	1997	1998	1999	2000	2001	2002	2003	2004
ATA	0.002566	0.001759	0.002834	0.003838	0.007145	0.008020	0.002999	0.000597	0.000751
Airtran	0.001493	0.003217	0.001108	0.002114	0.005587	0.004049	0.001675	0.004453	0.000406
Frontier	0.000717	0.000657	0.000905	0.001120	0.001698	0.001331	0.001139	0.000354	0.000386
AMWest	0.000848	0.000104	0.001554	0.002770	0.005685	0.002728	0.001149	0.000583	0.000715
SW	0.000122	0.000162	0.000138	0.000218	0.000263	0.000203	0.000166	0.000062	0.000076
JetBlue						0.001253	0.000634	0.000254	0.000221
Spirit	0.002284	0.002587	0.003010	0.010389	0.008088	0.013584	0.001899	0.000533	0.000221
Upper bound	0.002337	0.002790	0.002716	0.007238	0.007993	0.008877	0.000224	0.000586	0.000701
Lower bound	0.000339	0.000038	0.000407	-0.000417	0.001496	0.000029	0.000526	0.000224	0.000216
AVG	0.001338	0.001414	0.001591	0.003408	0.004744	0.004452	0.001380	0.000405	0.000463

Airline	1996	1997	1998	1999	2000	2001	2002	2003	2004
AMR	0.000089	0.000082	0.000082	0.000082	0.000070	0.000064	0.000065	0.000054	0.000051
Con	0.000088	0.000130	0.000113	0.000097	0.000076	0.000066	0.000080	0.000089	0.000084
Delta	0.000096	0.000087	0.000081	0.000048	0.000058	0.000061	0.000053	0.000068	0.000053
NW	0.000079	0.000053	0.000072	0.000060	0.000055	0.000054	0.000065	0.000060	0.000051
UAL	0.000062	0.000065	0.000072	0.000083	0.000069	0.000058	0.000075	0.000080	0.000057
USA	0.000069	0.000068	0.000057	0.000055	0.000044	0.000026	0.000013	0.000021	0.000013
Upper bound	0.000094	0.000109	0.000089	0.000087	0.000074	0.000070	0.000084	0.000087	0.000075
Lower bound	0.000067	0.000052	0.000061	0.000048	0.000041	0.000039	0.000033	0.000037	0.000028
AVG	0.000081	0.000081	0.000079	0.000067	0.000062	0.000055	0.000059	0.000062	0.000052

Airline	1996	1997	1998	1999	2000	2001	2002	2003	2004
AMR	0.000744	0.000795	0.000914	0.002746	0.002768	0.001827	0.000906	0.000638	0.000670
Con	0.000389	0.000649	0.000718	0.002203	0.002114	0.001890	0.001072	0.000817	0.000612
Delta	0.000685	0.000666	0.000742	0.001644	0.001778	0.001822	0.001115	0.000635	0.000691
NW	0.000629	0.001140	0.001785	0.002263	0.001520	0.001446	0.000998	0.000639	0.000696
UAL	0.000616	0.000812	0.001097	0.002182	0.004611	0.002613	0.001307	0.000610	0.000671
USA	0.000439	0.000627	0.000680	0.002022	0.001694	0.001242	0.000736	0.000559	0.000588
Upper bound	0.000705	0.000971	0.001430	0.002552	0.003642	0.002267	0.001226	0.000741	0.000662
Lower bound	0.000429	0.000483	0.000515	0.001801	0.001286	0.001271	0.000819	0.000558	0.000580
AVG	0.000567	0.000731	0.000972	0.002176	0.002464	0.001773	0.001022	0.000650	0.000621

In order to investigate the significance of the difference between the major and LCC group averages two analyses of variance (ANOVAs) were performed (Tables VI and VII) on the calculated averages for major and LCC carriers in safety and service. As seen, for the period of the study here the safety rates for the LCC carriers and major carriers have no significant differences, with the means being equivalent over the nine years studied in this paper. As seen from Table VII, the LCC carriers still have a significantly higher complaint rate than the major carriers over the entire period of the study. Investigating this result while examining Tables IV and V highlights an interesting issue in this area of airline service quality. As has been noted in other studies, the model for all LCC carriers, Southwest, often has a lower complaint rate than any of the airlines in the LCC group or study as whole (Rhoades et al., 1998; Rhoades and Waguespack, 2004). If Southwest's complaint rate was not part of the LCC Group, the difference would only be more pronounced. It must also be noted that two of the airlines driving the complaint rate upward for the LCC group, ATA and American West are former legacy type airlines. Only recently have the two shifted their business model to the LCC mode with ATA additionally having to enter bankruptcy court in October 2004 to regroup its operations. While the LCC model is gaining market share in the airline industry due to pricing considerations, without the presence of the mature and profitable Southwest in the group, the LCC operators would not likely have the favorable image held in many areas.

Discussion

The findings of this study indicate that the LCC group examined here have closed the gap on their traditional rivals in the area of safety quality, posting safety rates that are not statistically different from the traditional carriers over the period of this study. On the other hand, they have not as a group yet addressed the problem of basic service quality, posting a statistically lower level of quality (as measured by consumer complaints). Since service quality is far more visible to consumers, the problem of service failures is important. Closing this gap in service quality is essential if these carrier hope to continue to draw consumers away from the traditional carriers, particularly the highly valued business traveler. Still, even in this area the LCC group is gaining ground

since September 11, posting complaint rates better than traditional rivals. It should be noted that within the LCC group Southwest and America West are (in terms of revenue) considered major carriers and have posted complaint rates that are more consistent with the traditional carriers. Southwest, in fact, has posted one of the best service quality performances of the major, traditional carriers. Of the remaining LCCs, JetBlue and Frontier have performed well and shows signs of achieving service quality levels comparable to traditional carriers. As a group, 2002 was a much better year for the LCCs in terms of service, but it should be noted that the industry as a whole benefited in a strange way from the downturn following September 11 which forced reductions in flight schedules that improved on-time performance, lowered flight problems, and reduced the number of bags sent through the system (Rhoades and Waguespack, 2004). One of many questions facing the LCCs is whether they can sustain their quality performance in the face of rapid growth, a factor often cited in the failure of the first post-deregulation LCC People Express (Zellner, 2004).

Carrier type	Mean	<i>F</i>	Sig.	Table VI. Analysis of variance tables for safety rates per departure
Low cost carriers	0.000066	0.000	0.991	
Major carriers	0.000066			
Carrier type	Mean	<i>F</i>	Sig.	Table VII. Analysis of variance for complaint rate per departure
Low cost carriers	0.002101	50.277	0.023	
Major carriers	0.001219			

There are a number of reasons for the possible gap in service quality levels. First, there is the experience factor; learning to provide quality basic service takes time and the lifespan of so many LCC start-ups - WestPac, Kiwi, Eastwind, etc. - has only been three to five years. second, many of these carriers, as noted above, have experienced very rapid growth since inception. This fact coupled with experience has often seen start-up carriers entering new markets without a great deal of prior historical data and then increasing frequency rapidly. This does not allow for extensive training or provide reliable baselines for assessing performance. JetBlue, who began operation in 1999, plans to expand its fleet to 290 planes by 2011. It took Southwest airlines 27 years to reach this mark (Zellner, 2004).

Low cost carriers should address the issue of service quality now and make improvements while their traditional counterparts are in disarray or lose a golden opportunity to increase their foothold in the US domestic market. The airline industry is a cyclical one and US carriers are also known to be very aggressive in protecting their markets (Graham, 1995; Rhoades, 2003). While JetBlue has made few mistakes since its inception, its entry into the Atlanta market where it challenged Delta Air Lines was one of them. Delta increased the number of flights by 50 percent and slashed their fares causing JetBlue to pull out after only seven months (Zellner, 2004). If low cost carriers are unable to take advantage of the current weakness in their traditional rivals, they will quickly find themselves facing the concerted marketing efforts of carriers with the size, capacity, and amenity level to entice passengers to return to their "traditional" home.

Conclusion

One of the most significant trends in US aviation in recent years has been the growth of low cost carriers. These carriers have gained market share on the promise of low cost, quality basic service. Those that have thrived have been able to deliver on these promises while expanding the reach of their networks. The success of this latest crop of LCCs has encouraged even formerly co-opted franchise carriers such as Atlantic Coast Airlines, renamed Independence Air, to strike out on their own in direct competition with their old mentors (Wallace, 2004). If one or more of the traditional carriers fails or is forced to shrink to profitability, then the already aggressive LCCs are likely to gain even further ground.

The LCC trend is spreading rapidly outside the USA as well. Europe's Ryanair, a true no-frills Southwest-style carrier, sold more than 23 million tickets last year and has posted double-digit profit margins for seven straight years (Johnson and Micheals, 2004). In Asia, carriers such as AirAsia, Virgin Blue, and JetStar are gaining markets and expanding service, although the less liberalized, international Asian market is not likely to see

more than 10 percent of its 2014 market taken by low cost carriers (Ionides and O'Connell, 2004). Still, the tide is turning for LCCs and traditional carriers are likely to continue floundering in the foreseeable future. If the new differentiated LCCs can find a way to create a branded image that relies on psychological rather than tangible branding, then the short-term advantages that they currently enjoy can be sustainable. A branded LCC with low cost operations would be a devastating blow to the traditional airline carrier.

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AuthorAffiliation

Dawna L. Rhoades and Biais Waguespack Jr

College of Business, Embry-Riddle Aeronautical University, Daytona Beach, Florida, USA

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