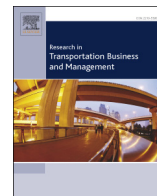




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## Research in Transportation Business & Management



# Twenty five years of measuring airline service quality or why is airline service quality only good when times are bad?

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### ABSTRACT

Airline service quality to many U.S. passengers may be the ultimate oxymoron based on stories, statistics and the perception that airlines help to foster. In reviewing data from the last 25 years from the Service Disquality Index (SDI) it appears that service quality in the U.S. is only met in times of economic distress or the after effects of terrorism. Due to recent actions mandated by the U.S. Department of Transportation, the chase for ancillary revenues and airlines perhaps finally practicing some constraint, major U.S. airlines are finally meeting minimum standards for service quality as reflected in recent SDI scores.

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## 1. Introduction

The headline for a National Public Radio article (Memmott, 2013) about the 2013 *Airline Quality Rating* (AQR at <http://www.airlinequalityrating.com>) report notes a fundamental contradiction in U.S. airline service quality, namely, the fact that the AQR results remain near all-time high levels for service quality delivered while customer complaints are “soaring.” Customer complaints to the U.S. Department of Transportation (DOT) are one of the four areas that comprise the AQR system with the other airline service quality measurements being on-time performance, denied boardings, and baggage problems. The difficulty with this type of reporting is that so few consumers actually complain to the DOT where the complaint numbers are generated. An examination of the *Air Travel Consumer Report* (ATCR at <http://www.dot.gov/airconsumer/air-travel-consumer-reports>), the source of the data for the AQR, would reveal the fact that the complaint rate for all of 2012 was 15,335 complaints out of 51,618,136 passenger enplanements or a 00.0297 percentage. In 2011 there were 11,546 complaints out of 45,686,141 passenger enplanements or a 00.0252 percentage. While the story correctly notes “complaints last year rose 22 percent in 2012,” the actual percentage difference in the number of complaints between the years, there is a miniscule percentage difference when one uses enplaned passengers as the denominator for the actual percentage rate. This example demonstrates a problem with examining only one of the service factors reported by the ATCR. The

rates reported by the National Public Radio story and the AQR do not reflect the relatively small absolute magnitude of the change in complaint behavior.

Another annual report, the *J.D. Power Airline Satisfaction Study* (2013), found one of the highest levels of satisfaction with airline service since 2006, although passengers who reported paying baggage fees reported overall lower levels of satisfaction. Past research has shown little relationship between the AQR report and the J.D. Power Satisfaction Study (Waguespack & Rhoades, 2009). The difficulty in understanding and comparing airline service quality reports arises from the varying systems of measuring service quality available. The AQR uses secondary airline operational data reported to the DOT, while J.D. Power relies on a national sampling process that considers a variety of additional service quality indicators. Both measures provide only a snapshot of U.S. airline service quality without placing the airlines into a broader service context. Thus, it appears within the U.S. an industry that normally ranks near the bottom of the annual American Customer Satisfaction Index (ACSI at <http://www.theacsi.org>) when compared to other industrial segments and once ranked below the U.S. Internal Revenue Service in customer satisfaction in the ACSI can remain at near all-time highs in ‘quality’ depending on what you measure and who you ask (ACSI, 2013; J.D. Power, 2013; Yu, 2007). If U.S. customers are more satisfied with their experience at the taxman’s office than their airline counter, then where is the quality? What do these measures of ‘quality’ represent? What does it say about U.S. consumers and airlines?

Conventional marketing theory would suggest that service quality leads to customer satisfaction which leads to customer loyalty and increased corporate profits (Szwarc, 2005). Under this conceptualization why service quality matters is clear—a satisfied customer leads to

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loyalty, repurchase behavior and a recommendation to other customers (Harris & Uncles, 2007; Ringle, Sarstedt, & Zimmermann, 2011; Saha & Theingi, 2009). The Net Promoter Score (NPS) system is perhaps the most extreme conceptualization of this process. The NPS argues that while service quality and customer satisfaction are important, in reality satisfaction surveys and tracking studies do not predict loyalty or the customer repurchase behavior that firms seek to foster. Instead one question, “how likely is it that you would recommend [company x] to a friend or colleague?” (Reichheld, 2003; page 49) drives growth. Airlines such as Southwest and JetBlue use the question in their post flight customer surveys to find the ‘promoters’ who support airline growth (Bain & Company, 2013; Reichheld, 2003).

So, does it matter that airline passenger complaints (and presumably dissatisfaction) are rising? Is it time for airlines to rethink their customer service as part of a broader marketing campaign? Has poor service and low customer satisfaction endangered corporate profits? In the case of airlines, the answer to these questions, again, is unclear. A case in point is the recent news that airlines posted new record revenue for ancillary fees such as checked luggage and changed reservations that helped raise the profit margin for the top 10 carriers to 3.7% (Jones, 2013). Contrast this report to a list of the Top 6 air passenger complaints which places additional fees in the number one spot ahead of seat comfort, flight delays and cancellations, lost or misplaced baggage, length of time at security, and unfriendly security employees (Foster, 2012). In short, the increasing fees that appear to be helping airlines achieve profits are the number one complaint of airline customers.

During the twenty-five years the DOT has published the *Air Travel Consumer Report*, the U.S. airline industry has witnessed the recession of the early 1990s (1990–1991), the bursting of the dot.com bubble (1999–2000), the terrorist attacks of 9-11 and the resulting impact on flight levels, and the Global Financial Crisis of 2008 with the associated “Great Recession” that followed. While the trend in fuel prices has been upward, there have also been periods of fuel price spikes, particularly in 2000, 2008, and 2011 (Avro, 2012). Since the airline industry is highly cyclical and sensitive to the economic cycle and especially fuel sensitive, these events have had a significant impact on the industry (Jang, Choi, & Lee, 2011; Rhoades & Waguespack, 2008a, 2008b; Taneja, 2003). This impact has been reflected in the financial, operational, and, as we will see, quality performance of the industry.

The *Service Disquality Index* (SDI) utilizes the ATCR data for on-time flights, baggage reports, oversales, passenger complaints to the DOT and cancellations standardized by departures to track the rise and fall of airline service factors since the inception of the ATCR (Rhoades & Waguespack, 1999, 2000, 2001, 2004, 2005, 2008a, 2008b; Rhoades, Waguespack, & Truedt, 1998). Not all U.S. air carriers are presented in the ATCR as only air carriers earning at least 1% of domestic scheduled passenger revenues must report the operational data in the ATCR. Unlike the AQR, the SDI has never weighted its various measures and is expressed as the total number of ‘quality’ problems per departures. This review updates the SDI twenty year report on U.S. airlines service quality including the number of cancellations which was added to the ATCR in April of 2000 (Rhoades & Waguespack, 2008a, 2008b). The methodology provides two benefits over the AQR. The SDI derived scores represent the likelihood of a service problem per departure for the airline. This method allows a historical view of the service disquality delivered by the airline as well as a meaningful measure for consumers. Additionally, as the AQR reports a negative weighted score, since no airline has ever received a positive score, there is little value to consumers of the negative score. In fact the AQR is usually reported as a simple ranking of U.S. airlines without much discussion of the meaning of the scores computed. The twenty five year review of SDI scores in this research leads into a discussion of what service quality means in the airline industry, how airlines respond to service quality concerns, and why passengers have made airlines the industry everyone loves to hate.

## 2. Defining and measuring quality

One of the results of the Airline Deregulation Act of 1978 was to change the way airlines approached service quality. Prior to 1978, the Civil Aviation Board (CAB) established minimum service standards as well as fares. With deregulation, markets would now signal airlines on price, routes, and service levels. There are two general methods for measuring airline quality. The first is based on customer survey research. Academic research journal articles have appeared utilizing some conceptualization such as SERVQUAL (Babbar & Koufteros, 2008; Chau & Kao, 2009; Saha & Theingi, 2009; Wu & Wang, 2012) or Total Quality Management (Namukasa, 2013; Singh & Sushil, 2013) and organizations such as *Frequent Flyer*, Conde Nast, and *Consumer Reports* periodically release the results of their latest surveys. While these organization surveys are often widely cited in the press and provide an excellent snapshot into airline quality, there are a number of weaknesses. First, both the academic research and the organizational surveys are cross-sectional and the factors included within and across surveys have tended to vary making comparisons difficult. Second, these surveys have often failed to provide overall quality ranks in favor of category-by-category rankings (best food, best entertainment system, etc.). The second method of examining airline service quality in the U.S. relies on secondary data, primarily from the ATCR. The Aviation Institute at the University of Nebraska published the first *Airline Quality Rating* report in 1991. The original report included service, safety, and financial indicators that were weighted by industry experts. The AQR was changed to disaggregate, then eliminate some factors to reflect a ‘purer’ service quality measure. The second group of researchers began reporting on airline service in 1998 with the *Service Disquality Index* (SDI), although the index went back to the first publication of the ATCR in 1987 to begin analysis of service disquality (Rhoades et al., 1998). Service and safety quality were separated from inception to construct two different rankings of airline performance (Rhoades & Waguespack, 1999, 2004). Rhoades and Waguespack (2000) examined the service and safety quality of US national and regional carriers while Rhoades and Waguespack (2005) compared traditional legacy (major carriers) with low-cost carriers (LCC). Over the years, the SDI has found little relationship between service and safety quality for major US carriers, but there is a very high relationship between the rankings for national and regional carriers (Rhoades & Waguespack, 2000).

Rather than simply ranking carriers, the SDI calculated a mean and confidence interval for each year to determine if there were true statistical differences between the reporting carriers. In most cases, the top two and bottom two carriers in a given year are statistically different from others in the ranked lists. Results from the twenty year report found three distinct periods in service quality—1987 to 1994, 1995 to 2000, and 2001 to 2006 (Rhoades & Waguespack, 2008a). Rising service problems, reflected in higher SDI scores, corresponded to times of economic and airline recovery. During periods of financial and social crisis, airlines and customers retrench. Fewer flights and passengers reduced airport congestion, improved on-time performance and corresponded to less checked baggage to lose and flights to cancel.

## 3. SDI calculation: methods and findings

The U.S. Department of Transportation *Air Travel Consumer Report* is the source for the data analyzed. The ATCR reports on a variety of airline operating statistics for airlines earning at least 1% of domestic scheduled passenger revenues. Data collected includes departure and on-time performance across U.S. airlines and major U.S. airports along with airlines’ cancellation totals and categorized causes of delays. Additional metrics on service quality include involuntary denied boardings, mishandled baggage, and customer complaints to the U.S. DOT on flight problems, ticketing, refunds, fares, customer service, advertising, and other sales (reservations) and service categories. To complete the cancellation data for the SDI rates in Table 1, a review of past airline operating

**Table 1**  
Service Disquality Index scores 1987–2012 for US major airlines.

Year	TWA	JetBlue	AirTran	SW	AmWs	USAir	AA	CO	United	NW	DL	Alaska	AVG
1987	.5525			<b>.8238</b>	.6699	<b>1.0071</b>	.8108	.6063	.4979	.6488	.6280	<b>.4819</b>	<b>.6727</b>
1988	.4671			.4996	<b>.6717</b>	<b>.8239</b>	.6583	.4879	.5082	.6366	.6026	<b>.3978</b>	<b>.5754</b>
1989	<b>.6343</b>			<b>.3689</b>	.5458	.5936	.5974	.5025	<b>.6172</b>	.5607	.5766	.3900	<b>.5387</b>
1990	<b>.6492</b>			<b>.3093</b>	<b>.6963</b>	.4020	.5526	.4293	.5725	.5378	.5078	.3895	<b>.5046</b>
1991	<b>.5297</b>			.3134	.5107	.3487	.3857	.3978	<b>.5221</b>	.4125	.4499	<b>.3125</b>	<b>.4183</b>
1992	<b>.5776</b>			<b>.3094</b>	.3608	.4208	.4478	.4875	<b>.5208</b>	.4230	.4922	.3617	<b>.4402</b>
1993	.3714			<b>.3047</b>	.3759	.3764	.4247	.4596	<b>.5334</b>	.4218	<b>.4718</b>	.3111	<b>.4051</b>
1994	.4480			.3436	.4056	.4278	.3757	<b>.4787</b>	<b>.4991</b>	.4335	.4463	<b>.3335</b>	<b>.4192</b>
1995	<b>.5048</b>			<b>.3481</b>	.4358	.3694	.4102	.3510	.4821	<b>.4869</b>	.4785	.4041	<b>.4271</b>
1996	.5009			.3236	.4206	.4221	.4614	<b>.3168</b>	<b>.6421</b>	.4349	<b>.5416</b>	.5393	<b>.4603</b>
1997	.4577			.2955	.3000	.3410	.4013	<b>.2950</b>	<b>.6169</b>	.4800	.4676	<b>.5306</b>	<b>.4186</b>
1998	.4969			.3557	.3470	.3521	.3800	<b>.3274</b>	<b>.7765</b>	<b>.6037</b>	.4619	.5385	<b>.4640</b>
1999 <sup>a</sup>	.5092			<b>.3455</b>	.4145	.4410	.4518	.3687	<b>.7079</b>	.4093	.4985	.4493	<b>.4596</b>
2000	.6149			.4267	<b>.6200</b>	.4070	.4823	.4594	<b>.6789</b>	.4582	.5179	<b>.3056</b>	<b>.4971</b>
2001	<b>.6864</b>			.4033	.3989	.3383	.3959	.3932	<b>.5202</b>	.3643	.4397	<b>.2507</b>	<b>.4191</b>
2002				.2971	.3543	.2563	.3612	.2829	.3782	<b>.3797</b>	<b>.3974</b>	<b>.2135</b>	<b>.3245</b>
2003		<b>.4462</b>	.2571	.2899	.3434	.3241	.3994	.2969	.4080	.2953	<b>.4648</b>	<b>.2181</b>	<b>.3403</b>
2004		.4028	.2384	<b>.1594</b>	.4226	<b>.4697</b>	.4505	.2993	.4223	.3735	<b>.6247</b>	.3227	<b>.3805</b>
2005		.5434	<b>.3163</b>	.3844	.4623	<b>.7920</b>	.5935	.4119	.4733	.4620	<b>.8414</b>	.4805	<b>.5237</b>
2006		.5406	.4211	.5409		<b>1.3385</b>	.7509	.5517	.7062	.5153	<b>.9280</b>	.6116	<b>.6905</b>
2007		.6022	<b>.3894</b>	.5422		<b>.9726</b>	.9458	.6702	.7311	.5722	<b>1.0766</b>	.6615	<b>.7164</b>
2008		<b>.4016</b>	.4555	.4816		.7589	.8572	.6312	<b>.8948</b>	.5300	<b>1.0059</b>	.5374	<b>.6554</b>
2009		<b>.2925</b>	.3104	.4388		.5570	.6813	.5173	<b>.7843</b>	.4548	<b>.8327</b>	.5272	<b>.5396</b>
2010		<b>.2962</b>	.3952	.4422		.4954	<b>.6436</b>	.5202	<b>.6691</b>		.6352	.4283	<b>.5028</b>
2011		<b>.2667</b>	.3399	.4282		.4508	<b>.6211</b>	.6007	<b>.7713</b>		.5128	.3912	<b>.4870</b>
2012		<b>.2256</b>	.3806	.3919		.3547	<b>.5322</b>		<b>.7254</b>		.4649	.3994	<b>.4343</b>

<sup>a</sup> Only 1 firm above the 95% Confidence Interval due to the high score this year.

statistics from the Bureau of Transportation Statistics was required as cancellations were not added to the ATCR until 2000 (Rhoades & Waguespack, 2008b). Total yearly departures by carrier were obtained from the ATCR and used to normalize the service data. Service quality rates were calculated by year for the individual carrier and a yearly average for the carriers investigated. The total disquality rate represents the sum of the following data: the percentage of late flights, total number of consumer complaints, total number of involuntary denied boardings, total number of mishandled baggage reports, and cancellations divided by total yearly departures for a particular airline. In a real sense, this rate is a measure of disquality and can be interpreted as the number of quality problems or probability of a quality problem per departure.

Table 1 displays the yearly SDI score by airline and then the SDI average for the year. Reporting carrier status is defined in the ATCR by revenue earned of at least 1% of domestic scheduled passenger revenues. Thus, carriers do not typically appear in the ATCR when beginning flight operations. Some carriers such as Virgin America, with a growing reputation for high levels of service; Spirit Airlines, known as an ultra-low cost carrier with stories of service problems; and Allegiant Airlines, an ancillary revenue leader, have not reached the revenue requirements needed to be designated as reporting carriers. SDI rates in Table 1 appear when the carrier is designated as a reporting carrier by earned revenue level and have at least one year worth of data available. Carriers disappear either when the carrier ceases operations due to bankruptcy or a merger and acquisition occurs and the airline completes the integration of operations to fly under a single operating certificate. Highlighted are those airlines whose disquality rates exceed the 95% confidence interval from the mean for that year in operation and the airline with the best SDI score that year. What can be observed is how some major airlines seem to go through periods of extreme disquality. Whether due to the poor financial position of the airline (TWA in the early 90s), ongoing labor relation problems (United in the late 90s) or difficulty integrating operations and systems while going through the merger process (AmWest & US Airways mid 00s; Delta and NorthWest late 00s) or both labor and

merger integration (United late 00s), an unfortunate streak of disquality seems to be common among a select few carriers. To further illustrate the disquality trends Fig. 1 demonstrates the continuing service quality roller coaster that some airlines engage in through the economic cycles noted. From a consumer perspective, quality issues seem to be at their best when fewer passengers are flying but as soon as an economic up-turn occurs, service disquality quickly rises for many airlines.

#### 4. Service disquality and recent operational trends

In the SDI twenty year review cited earlier, the authors found that service quality began to deteriorate in the recovery two years after the events of 9-11 starting in 2003. This twenty five year examination demonstrates that this trend continued for some carriers into the economic difficulties of 2007 and 2008. Three different forces have come forth since 2008 to lower the SDI and usher in a new period of relative service quality by the major US airlines.

First, there were fewer passengers enplaned from 2007 through 2011 due to the economic hardships of the “Great Recession.” Many businesses trimmed travel expenses as is common during difficult economic times. Consumers talked of “staycations” instead of vacations for their leisure activities, trimming flights in favor of activities near home (Bonner & deHoog, 2012, Ritchie, Molinar, & Frechtling, 2010; Webber, Buccellato, & White; 2010). As consumers and business fliers were dealing with economic hardships, the U.S. airline industry was also going through two mergers, thus reducing the number of major carriers. Merger activities with resulting hub retrenchments, the economics of the global recession, and the parking of older fuel burning planes due to the fuel shock of 2008 lead to an industry retrenchment and capacity control (Schofield, 2012, 2013).

Second, the ongoing changes with baggage during the period from 2007 onward must be investigated. Table 2 is an overview of what occurred with baggage reports and fees by departures by the major U.S. airlines for the last five years (data in Appendix One; sourced from the ATCR and Bureau of Transportation Statistics). As baggage reports are



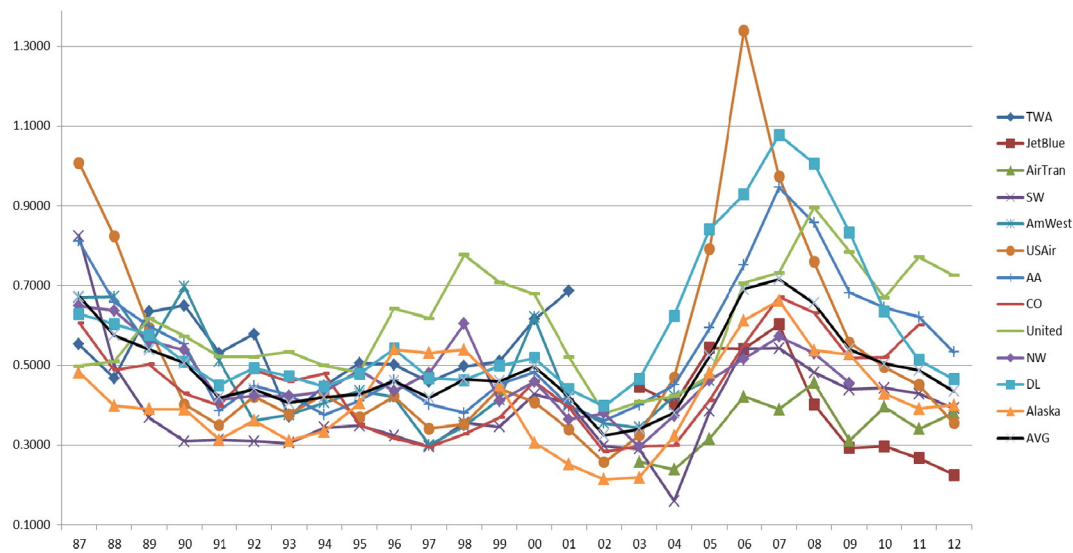


Fig. 1. SDI scores plotted by year.

one of the major components of the SDI (and AQR) any system utilizing the metric would likely see an improvement in service quality. Consumers began to greatly reduce the number of checked bags during the period as most of the major U.S. airlines instituted baggage fees. Southwest is now the only major U.S. airline allowing 2 free bags, while JetBlue allows one free bag. While airlines began charging fees as part of the drive to increase ancillary revenues and improve the airlines financial position during the dire economic times, another result of the new fees was to reduce the number of bags available that were possibly lost, damaged or pilfered.

Lastly, the role of government intervention through Department of Transportation rule making and the threat of further rules and regulations must be discussed. After the recovery from the events of 9-11, service disquality quickly rose. Airlines, greatly impacted by 9-11 and the ongoing economic issues such as fuel spikes, were not ready to invest in service activities such as better baggage systems. At the same time, a new disquality action, named a 'stranding,' was making news (Karp, 2008; Waguespack, 2012). Strandings occur when consumers are stuck in planes on the airport tarmac either awaiting take-off slots when departing or gates at the terminal upon arrival. With the dawn of social media helping strandings make national news, U.S. carriers found themselves under review by the DOT for aircraft operations, procedures and scheduling. The DOT began a series of "customer initiatives" under the banner of "Enhancing Airlines Passenger Protections" (Federal Register, 2007a). The primary focus was to investigate the stranding problem, but further actions related to airline ticketing, pricing and reservation processes, cancellations and oversales were also introduced (Federal Register, 2007b, 2007c). The first result of this process was the implementation of the "Tarmac Rule" (Federal Register, 2009) focusing on U.S. domestic airlines. The rule required U.S. airlines for domestic flights to get planes into the air when departing or have a gate waiting when a flight arrives within 3 hours or face fines and penalties increased to \$27,500 per passenger.

The DOT went further in addressing consumer protections with the release of the "Final Rule" (Federal Register, 2011) in April of 2011. This rule added foreign carriers and international flights to the Tarmac Rule, with a 4 hour limit, and mandated a series of additional customer service requirements. Table 3 is derived from the April 2011 "Final Rule" and address a wide range of airline marketing activities.

Table 3 reflects the willingness of the DOT to take action on consumer issues that the agency clearly feels the airlines are not addressing in a clear and consistent manner. The DOT also made it clear that the agency is not yet finished with rulemaking and is currently investigating how ancillary revenue options are reported (Waguespack & Curtis, 2013). Additionally, a new rule proposed in May 2014 (Federal Register, 2014) may lower the revenue reporting requirement for airlines to 0.5% from the current 1% of system revenues to expand the number of carriers required to report service quality metrics.

## 5. Discussion and implications

Recent research (Namukasa, 2013; Singh & Sushil, 2013) and articles (Kramer, 2013; McCartney, 2012) still highlight the role that the individual service provider can play in delivering service quality. While the factors reported by the ATCR and used by the SDI, the AQR and in other news stories on flight service difficulties are seen as hygiene or maintenance factors (Reed, 2007), the operational measures remain the basic metrics of airline quality. Providing on-time service, with minimal delay on the tarmac and prompt delivery of checked baggage, is the expectation of consumers today. With the spread of digital technologies and social media platforms for relaying service quality failures, consumers have shown a willingness and ability to 'punish' those airlines that fail to meet these expected service quality levels. In the past complaint behavior was largely limited to an individual's immediate circle of friends and family in the old word-of-mouth communications. Now, those 'friends' may be part of an extended digital network with thousands of followers. In response airlines have established 24-7 social media centers to track the posts, tweets and pictures being generated by air passengers in an effort to try to stop service quality failures from going outside the structure of the firm–customer relationship. Viral events can create significant negative publicity. For every airline that strives to have a story go viral, such as the spate of posts in late October 2013 when both Delta and Virgin America launched new safety videos, other airlines strive to avoid being an item on the "What's Trending" section on the front page of Yahoo or posted on social media platforms across the globe. Perhaps the clearest sign yet of the way that digital and social media influence is changing the nature of the airline service quality strategy is the recent efforts of Ryanair's CEO Michael O'Leary to use social media to 'soften' the perception of the

**Table 2**  
Percentage changes in departures, baggage reports & baggage revenue 2007–2012.

Airline	% change departures	% change baggage reports	% change in bag reports per departure	% change in total revenue baggage	% change in baggage revenue per depart
AirTran <sup>a</sup>	−6.69	−65.95	−63.50	1696.23	1825.10
Alaska	−8.45	−50.17	−45.57	837.87	924.39
American	−18.30	−65.40	−57.65	347.56	447.83
JetBlue	+18.66	−56.60	−63.43	331.22	263.40
Delta <sup>c</sup>	+52.50	−57.83	−72.35	796.86	488.12
Northwest <sup>a</sup>	−26.56	−60.03	−45.57	662.18	937.87
Southwest <sup>b</sup>	−3.12	−42.00	−40.14	796.86	488.12
USAirways	−17.42	−76.78	−71.88	1760.98	2153.52
United <sup>c</sup>	7.49	−18.75	−24.41	1231.17	1138.47
Continental <sup>a</sup>	−23.21	−47.25	−31.31	504.09	686.63
AVG		−49.99	−49.43	965.16	1024.46

<sup>a</sup> AirTran & Continental 4 years of data; Northwest 3 years due to mergers.

<sup>b</sup> Southwest 2012 results includes AirTran baggage revenue as operations not completely merged.

<sup>c</sup> Resulting merged airline, accounts for the increase in departures.

airline and its service reputation (Clark, 2013). Long known for stressing price as the most critical factor when choosing airline service, Ryanair is acknowledging that even an ultra-low cost carrier must be aware of its service quality reputation and use digital media tools to address service quality perceptions in the marketplace.

Still the question remains whether poor service quality impacts airline profitability as predicted by the general marketing literature on customer service, loyalty, and repurchase. If higher levels of quality do not impact the bottomline, then there is no incentive for an airline to provide the service beyond the threat of new DOT rulemaking. This appears to be precisely what Mazzeo (2003) discovered when studying airline flight delays and found that delays were more common and longer in duration on flights where only one carrier provided direct service or when the flight passed through an airport where the airline represented a large share of the overall flights. He concluded that airlines had no incentive to improve this area of service quality since customers had little choice in carriers. Further supporting this possibility is research (Parast & Fini, 2010) that found that service quality as measured by on-time performance had no significant influence on profitability for US airlines from 1989 to 2008. Labor productivity is the most significant positive predictor of profitability, while gas price and annual maintenance costs have a negative relationship on profitability in the study. As

airlines are a service industry the researchers used on-time percentage as a proxy for service quality. Although the study found an initial correlation between on-time performance and profitability, on-time performance did not emerge as a significant variable with an impact on profitability. Calling the initial correlation a “spurious relationship” (page 467) and referencing the research of Price and Simon (2009) the authors concluded that the results may provide further evidence of the possibility of the mutual forbearance hypotheses that airlines in multi-market situations have no incentive to improve service quality since it does not influence profitability and that any attempt to increase service quality may simply bring a competitive response in other markets. Both studies (Parast & Fini, 2010; Price & Simon, 2009) acknowledge the possibility of utilizing further service quality measurements (other than on-time performance), such as baggage, over sales and bumping, cancellations or cabin service as these measures might impact the profitability findings. Still both suggest that little incentive exists to influence profitability by improving service quality beyond competitive standards in the airline industry.

While recent experience shows that there is no profit incentive to improve overall service, the last few years have demonstrated the impact of ancillary revenue on airline bottomlines. For many U.S. carriers ancillary revenues are a major source of the profits being earned. However, all indications are that airline customers

**Table 3**  
Enhancing U.S. airline passenger protections (76 Fed. Reg. 23110).

Airline service factor	U.S. DOT mandated action
Customer service plans	U.S. and foreign carriers must establish and audit customer service plans and state policies for baggage delivery, ticket refunds and the allowance of a 24 hour reservation period
Oversales	Raised the minimum denied boarding compensation; that such compensation must be made to fliers on frequent flier tickets and inform both voluntary and involuntary compensation seekers of all restrictions and fees associated with the compensation
Full fare advertising	Requires ads that state a price to clearly state the full price to be paid, including taxes and fees and prohibits ‘opt-out’ ads for air transportation
Baggage and other fees and code share issues	Baggage fees must be on the airline homepage page for three months; e-tickets must include baggage fees and allowances; fare quotes must have baggage information clearly displayed on the first page of a fare quote; disclose any fee differences between the selling airline and the carrying airline in a code share ticketing or fare quote
Post purchase price increases	Bans the practice unless the price increase due to a government fee or tax or only if the consumer aware and agrees to such a stipulation prior to purchase
Flight status changes	Promptly notify passengers of changes through whatever means is available for passengers who subscribe to the carrier's notification system, in the boarding area, or through the carriers telephone reservation system of delays of 30 minutes or more or within 30 minutes of a cancellation or flight diversion
Choice of forum provisions	Prohibits U.S. and foreign carriers from limiting a passengers forum (justice system or court) to pursue litigation to a particular inconvenient venue

dislike ancillary fees. If ancillary revenues in fact cause customers to flee to not-fee charging airlines, then theory would predict that carriers would drop the charges. The most recent J.D. Power (2013) survey noted that while customers indicated dissatisfaction with fees and the replacement of human contact with technology (online booking and check-in, self-service check-in, mobile apps), there is evidence of increasing acceptance, a result that might suggest that consumers will simply adjust their expectations of quality in these areas as passengers have done with their expectations of airline food. Again, these findings would argue that airlines have no incentive to improve quality and every incentive to reduce costs in these areas of quality and wait for expectations to adjust. In the absence of competition, a rational business would do nothing else.

Silling (2013) has noted that in the hotel industry where ancillary fees have a long history, the trend has been toward increased and personalized offers that add customer value. She suggests that airlines bring the magic of flying back by allowing customers to customize their experience: pre-order parking, fast track security, pre-order a meal, home pick-up and delivery of luggage, escort service through the airport, etc. In fact, airlines do consider ancillary fees as a way to allow a personalized and customized experience that allows “you pay to get on the plane, then you keep paying until you reach the level of comfort and service that matches your lifestyle and pocketbook, from zero extra for a middle seat in the way, way back of a fully loaded wide-body to a vast sum to be cosseted in business class” (Saporito, 2013).

There are two problems with this approach for airlines: First, many passengers feel that there is an element of dishonesty in quoting a price for a fare and then ‘nickel-and-diming’ you afterwards for all the items (seat assignment, boarding time, overhead bin space, etc...) not included in the base fare or making a family pay extra for seat assignments to sit together. A better option might be to bundle services at the beginning of the flight, but this requires airlines to track and identify each customer’s needs. The International Air Transportation Association is attempting to aid this process with the push toward the “New Distribution Capability” which eases the display of ancillary services across distribution channels. The DOT recently approved the needed policy framework for this to proceed in the U.S. (Blachy, 2014).

The second problem may be one technology cannot solve, but may add to the airline difficulties. Due to the limited space in airports and on an airplane, most airline service is highly visible. Unlike a hotel where many of the added benefits are often not visible to other customers (fully stocked bar, in-room jacuzzi, free wi-fi, concierge service, access to private lounge, etc), airlines provide differentiated service in full view of other passengers who see the different seats, meals, boarding access, etc..., and may use digital technology to report on such differences immediately to others they may be flying with in different sections of the airplane or friends via social media. Seeing these service ‘extras’ in person or through a tweet from a friend in the front of the plane while stuck in that last row middle seat can only stir consumer resentment. This might well cement the airline industry’s title as “The service industry we love to hate”, but it is unlikely to change airline behavior.

**Appendix A. Baggage reports, departures & baggage revenue; US major airlines 2007–2012.**

		Baggage				Reports				Total rev				Bag revenue			
		Year	Departures	Reports	Per depart	Bags	Per depart	Year	Departures	Reports	Per depart	Baggage	Per depart	Year	Departures	Reports	Per depart
AIRTRAN*	2007	263,159	99,389	0.378	\$9,167,536	\$34.84	ALASKA	2007	160,185	102,150	0.64	\$16,151,000	\$100.83				
AIRTRAN	2008	259,710	73,088	0.281	\$29,400,965	\$113.21	ALASKA	2008	150,345	69,467	0.46	\$22,028,000	\$146.52				
AIRTRAN	2009	249,867	40,931	0.164	\$145,982,937	\$584.24	ALASKA	2009	136,473	58,475	0.43	\$58,669,000	\$429.89				
AIRTRAN	2010	246,423	40,673	0.165	\$152,147,459	\$617.42	ALASKA	2010	136,967	48,504	0.35	\$108,997,000	\$795.79				
AIRTRAN	2011	245,543	33,844	0.138	\$164,670,008	\$670.64	ALASKA	2011	143,211	47,563	0.33	\$157,013,000	\$1,096.38				
% Change		-6.69%	-65.95%	-63.50%	1696.23%	1825.10%	ALASKA	2012	146,656	50,906	0.35	\$151,475,000	\$1,032.86				
							% Change		-8.45%	-50.17%	-45.57%	837.87%	924.39%				
AMERICAN	2007	633,857	573,748	0.905	\$124,538,000	\$196.48	JETBLUE	2007	191,450	111,400	0.582	\$16,415,518	\$85.74				
AMERICAN	2008	589,910	424,796	0.720	\$277,991,000	\$471.24	JETBLUE	2008	193,037	74,020	0.383	\$35,307,660	\$182.91				
AMERICAN	2009	544,277	299,257	0.550	\$475,184,000	\$873.06	JETBLUE	2009	191,859	53,262	0.278	\$53,267,389	\$277.64				
AMERICAN	2010	533,987	262,551	0.492	\$580,663,000	\$1,087.41	JETBLUE	2010	197,849	54,103	0.273	\$57,019,620	\$288.20				
AMERICAN	2011	526,970	242,695	0.461	\$593,465,000	\$1,126.18	JETBLUE	2011	212,853	52,454	0.246	\$64,077,936	\$301.04				
AMERICAN	2012	517,846	198,501	0.383	\$557,385,000	\$1,076.35	JETBLUE	2012	227,183	48,346	0.213	\$70,787,422	\$311.59				
% Change		-18.30%	-65.40%	-57.65%	347.56%	447.83%	% Change		18.66%	-56.60%	-63.43%	331.22%	263.40%				
DELTA	2007	475,889	488,334	1.026	\$96,546,000	\$202.88	NORTHWEST	2007	414,526	224,879	0.542	\$37,501,000	\$90.47				
DELTA	2008	448,203	370,120	0.826	\$177,063,000	\$395.05	NORTHWEST	2008	365,572	138,919	0.380	\$121,599,000	\$332.63				
DELTA	2009	425,514	284,136	0.668	\$481,719,000	\$1,132.09	NORTHWEST	2009	304,416	89,886	0.295	\$285,825,000	\$938.93				
DELTA	2010	721,517	327,868	0.454	\$952,250,000	\$1,319.79	% Change		-26.56%	-60.03%	-45.57%	662.18%	937.87%				
DELTA	2011	724,970	254,210	0.351	\$863,608,000	\$1,191.23											
DELTA	2012	725,713	205,943	0.284	\$865,879,000	\$1,193.14											
% Change		52.50%	-57.83%	-72.35%	796.86%	488.12%											
SOUTHWEST	2007	1,168,871	612,347	0.524	\$20,799,000	\$17.79	US AIRWAYS	2007	485,447	455,303	0.938	\$27,738,385	\$57.14				
SOUTHWEST	2008	1,191,154	476,902	0.400	\$25,226,000	\$21.18	US AIRWAYS	2008	448,254	240,285	0.536	\$187,081,937	\$417.36				
SOUTHWEST	2009	1,125,111	357,525	0.318	\$26,983,000	\$23.98	US AIRWAYS	2009	409,717	139,632	0.341	\$432,280,000	\$1,055.07				
SOUTHWEST	2010	1,114,451	378,511	0.340	\$29,787,000	\$26.73	US AIRWAYS	2010	401,699	119,472	0.297	\$513,623,000	\$1,278.63				
SOUTHWEST	2011	1,145,163	413,538	0.361	\$32,035,000	\$27.97	US AIRWAYS	2011	403,252	129,140	0.320	\$506,339,845	\$1,255.64				
SOUTHWEST*	2012	1,132,447	355,149	0.314	\$143,198,000	\$126.45	US AIRWAYS	2012	400,888	105,730	0.264	\$516,206,697	\$1,287.66				
% Change		-3.12%	-42.00%	-40.14%	588.49%	610.63%	% Change		-17.42%	-76.78%	-71.88%	1760.98%	2153.52%				
UNITED	2007	490,002	340,784	0.695	\$53,002,000	\$108.17	CONTINENTAL	2007	323,151	207,170	0.641	\$42,844,000	\$132.58				
UNITED	2008	440,910	283,357	0.643	\$132,994,000	\$301.64	CONTINENTAL	2008	302,095	142,961	0.473	\$97,524,000	\$322.83				
UNITED	2009	372,239	196,356	0.527	\$268,977,000	\$722.59	CONTINENTAL	2009	263,453	90,690	0.344	\$254,488,000	\$965.97				
UNITED	2010	339,909	154,630	0.455	\$313,207,000	\$921.44	CONTINENTAL	2010	243,155	84,576	0.348	\$341,585,000	\$1,404.80				
UNITED	2011	307,629	152,519	0.496	\$276,816,943	\$899.84	CONTINENTAL	2011	248,163	109,288	0.440	\$258,816,000	\$1,042.93				
UNITED	2012	526,681	276,875	0.526	\$705,547,000	\$1,339.61	% Change		-23.21%	-47.25%	-31.31%	504.09%	686.63%				
% Change		7.49%	-18.75%	-24.41%	1231.17%	1138.47%											



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