How Product Quality Drives Profitability

The Experience at Holiday Inn

Quality-management gurus have always assumed that maintaining product quality would improve profitability. It turns out that they are correct.

BY SHERYL E. KIMES

Quality has long been a mantra of the U.S. lodging industry. Countless hotel properties have spent time and money on quality assurance, benchmarking, assessing the cost of error, continuous improvement, and total quality management—among other quality-related programs and tactics.[1] Most quality-assurance endeavors, however, seemed to assume that quality management is inherently worthwhile or presumed that quality would necessarily improve profitability. Few, however, offered direct evidence to support a relationship between improved quality and enhanced profitability. Indeed, with the arcane processes of quality circles and analyses of cost of quality and cost of error, one could argue that quality assurance as it developed in the late 1980s could become a process so tangled and expensive that one would be hard-pressed to show its financial benefits.

The idea that revenue is bolstered by product quality is inherently logical, however. This article seeks to establish a connection between quality management and financial success. The study on which this article is based analyzed three years of quality and operational-performance data from 1,135 franchised Holiday Inn hotels to determine the relationship between product quality and operational performance. After a review of relevant literature, this article describes the Holiday Inn study, provides an analysis of the relationship between quality and operational performance, and discusses managerial implications.

The Quality Premium

Although most quality-management articles did not seek to establish how quality improvement would enhance revenues, such research does exist. Research on the relationship between quality and financial performance began in the 1970s with studies on the Profit Impact of Marketing Strategies (PIMS). The PIMS researchers studied the effects of various marketing strategies on financial performance at over 500 corporations and found a strong link between perceived product or service quality and financial indicators.[2] Financial performance is affected by higher quality in two ways: **(1)** firms can charge

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[1] For example, see: Todd Comen, "Making Quality Assurance Work for You," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 30, No. 3 (November 1989), pp. 23–29; John R. Walker and Tamer Tamer Salameh, "The Q.A. Payoff," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 30, No. 4 (February 1990), pp. 57–59; Harold A. Records and Michael E. Glennie, "Service Management and Quality Assurance: A Systems Approach," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 32, No. 1 (May 1991), pp. 26–35; Kenneth Heymann, "Quality Management: A Ten-point Model," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 33, No. 5 (October 1992), pp. 50–60; Jonathan D. Barsky, "Building a Program for World-class Service," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 37, No. 1 (February 1996), pp. 17–27; James Y. Luchars and Timothy R. Hinkin, "The Service-Quality Audit: A Hotel Case Study," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 37, No. 1 (February 1996), pp. 34–41; and Deborah Breiter and Priscilla Bloomquist, "TQM in American Hotels: An Analysis of Application," *Cornell Hotel and Restaurant Administration Quarterly,* Vol. 39, No. 1 (February 1998), pp. 26–33.

[2] Lynn W Phillips, Dae R. Chang, and Robert D. Buzzell, "Product Quality, Cost Position, and Business Performance: A Test of Some Key Hypotheses," *Journal of Marketing,* Vol. 47 (1983), pp. 26–43; Phillip Thompson, Glenn DeSouza, and Bradley T. Gale, "The Strategic Management of Service Quality," *Quality Progress,* June 1985, pp. 20–25; Robert D. Buzzell and Bradley T. Gale, *The PIMS Principles: Linking Strategy to Performance* (New York: The Free Press, 1987); Robert Jacobson and David A. Aaker, "The Strategic Value of Product Quality," *Journal of Marketing,* October 1987, pp. 31–44.

EXHIBIT 1

Average number of defects by area

Area	Defects
Guest room	1.97
Guest bath	1.40
Exterior	1.22
Corridors	1.06
Lounge	1.05
Recreation	0.99
Kitchen	0.94
Meeting	0.90
Public restroom	0.82
Dining	0.82
Back-of-house	0.77
Lobby	0.57
Total	*12.51*

Note: Defects are those recorded by Holiday Inn inspectors in the report closest to February 1990.

a premium price and **(2)** firms can increase market share. Although quality does not always have a direct impact on return on investment (ROI), the increase on market share may indirectly influence ROI.[3]

Although researchers have found strong links among financial performance, product and service quality, and customer satisfaction at the corporate level, no one has addressed the link between financial performance and quality at the property level. The research described here addressed this matter by examining the relationship between product quality and operational performance at hotels franchised by Holiday Inn Worldwide.

Studying Performance

Holiday Inn Worldwide franchises or manages over 1,500 properties in the United States and Canada. Most, over 1,200 hotels, are franchised, and those properties form the basis of this study. Holiday Inn Worldwide maintained data on the operational and quality performance of all hotels and provided three years of data (February 1990–January 1993) for this study. To study the link between quality and performance, I developed definitions of product or service quality and operational performance.

Quality, defined. Hotels typically measure quality through inspections and with customer-satisfaction data. Inspections are usually conducted by the company itself, although some firms also use external inspection services. Holiday Inn Worldwide's own inspectors conducted regular quality-assurance inspections of hotels in its system during the study period. The results from the quality-assurance inspections were used as the indicator of product quality.

The chain's quality-assurance reports covered 19 different areas in the following four categories: rules of operation (4 areas), commercial facilities (10 areas), guest rooms (2 areas), and service (3 areas). Each area typically consists of 10 to 12 individual items on which the property could be rated as passing or failing. The number of deficiencies in each area determined whether a hotel passed or failed its inspection.

Trained Holiday Inn quality auditors conduct semi-annual inspections. The company conducts regular training sessions for its inspectors to ensure consistency and moves inspectors to different regions every few years to reduce the possi-

bility of bias. Inspections are not announced, and inspectors would typically spend a day performing the audit. Hotels receive reports detailing the results of the audit and are given an overall rating of acceptable, marginal, or unacceptable.

RevPAR rating. The study gauged operating performance using revenue per available room (RevPAR) because that statistic reflects performance in both occupancy and rate. The RevPAR figures were normalized, however, using a market index. While RevPAR is a valuable performance measure, it does not reflect differences in local conditions that affect hotel occupancy and drive ADR. For example, hotels in high-price areas tend to have a much higher RevPAR than hotels in low-price areas. To account for this weakness, a market index for each hotel was developed using competitive data obtained from Smith Travel Accommodations Reports (STAR Reports).

Holiday Inn hotels subscribed to the STAR Reports to obtain individual revenue reports for each of its United States and Canadian properties. The STAR Reports were used to calculate the RevPAR for the immediate mid-scale competitors for each Holiday Inn property. This information was then used to develop a market index so that the RevPAR for various properties could be compared.

The first step in developing the market index was to find the national RevPAR average of all the competitive properties. Next, I developed a market index for each Holiday Inn hotel by dividing the RevPAR of the immediate mid-scale competition by the average national RevPAR. I used a market index of 1.0 as the dividing line between high-price areas and low-price areas. For example, hotels in the San Francisco Bay area had market indices over 1.4 while hotels in rural Arkansas had market indices below 0.8. I then divided each Holiday Inn hotel's RevPAR by its market index to develop a market-adjusted RevPAR, which could be compared against the market-adjusted RevPARs of the other Holiday Inn properties.

The analysis comprised a total of 1,135 franchised hotels that were in operation at the beginning of 1990. The study excluded terminated hotels, company-owned and -managed hotels, and hotels with incomplete data. The analysis was conducted using six-month intervals from February 1990 through January 1993. (That is, intervals began in February 1990, August 1990, February 1991, August 1991, February 1992, and

[3] Phillips, *et al.*

August 1992.) The number of defects in each area for each subject hotel came from the most recent quality-assurance report for each test interval. The market-adjusted RevPAR for each of the subject properties was calculated from financial data for the six months prior to and the six months after each test date.

Analysis of the Quality-assurance Reports

The study chiefly analyzed each quality-assurance report's rating of the hotels' physical facilities. That included common facilities (i.e., lobby, public restrooms, dining facilities, lounge facilities, corridors, recreation area, meeting area, kitchen, exterior, back-of-house) and guest rooms (i.e., guest room and guest bath). The study did not look at rules of operation (because of their administrative nature) or at service issues (because service aspects were rarely cited as deficiencies). To develop a quality gauge, I calculated both the total number of items a given property failed and the total number of items failed in each area (see Exhibit 1).

Defects by area. If a hotel failed at least one item in a particular area, I considered it to be defective in that area. I compared the average market-adjusted RevPAR for hotels that were not defective in each given area against the average market-adjusted RevPAR for hotels that were defective in that area. I repeated this analysis for each of the 12 areas studied. I then tested to see whether the market-adjusted RevPAR differences were statistically significant.

Costly defects. As shown in Exhibit 2, having even a single defect seemed to cost the hotels money. For example, in February 1990, hotels with at least one defect in the exterior had a RevPAR of $3.12 less than hotels with no defects in the exterior. Hotels with at least one defect in the guest room had a RevPAR of $2.01 less than hotels with no defects in the guest room. Hotels with at least one defect in the guest bath had a RevPAR of $1.32 less than hotels with no defects in the guest bath.

Three areas consistently showed a statistically significant effect on RevPAR. Hotels with at least one defect in the exterior, the guest room, or the guest bath recorded a significantly lower RevPAR than those with no defects in those areas. Even worse, although even one deficiency in any of these areas had a statistically significant effect on RevPAR, deficiencies in a combination of those areas showed a lasting and noticeable effect on RevPAR.

EXHIBIT 2

RevPAR difference between hotels with at least one defect and those without defects

	2/90	8/90	2/91	8/91	2/92	8/92
Common areas						
Lobby	$0.66	$0.46	$1.55*	$1.36*	$1.25*	$0.97
Public restroom	$0.49	$0.26	$1.62*	$1.00*	$0.45	$0.47
Dining	$0.54	$0.43	$1.23*	$0.80	$0.72	$0.79
Lounge	$0.33	$0.64	$0.13	-$0.07	-$0.15	-$0.02
Corridors	$0.03	-$0.27	-$0.23	$0.01	-$1.00*	-$1.05*
Recreation	$0.82	$0.15	$0.67	$0.62	$0.61	$0.37
Meeting	-$0.31	$0.20	$0.10	$0.01	$0.32	$0.02
Kitchen	$0.97*	$0.20	$1.63*	$0.98*	$0.19	-$0.23
Exterior	$3.12*	$2.11*	$3.13*	$2.87*	$2.59*	$2.21*
Back-of-house	$0.17	$0.50	$0.34	$0.39	$1.23*	$0.97
Guest room						
Guest room	$2.01*	$0.85	$2.04*	$1.53*	$1.35*	$1.27*
Guest bath	$1.32*	$1.00*	$1.51*	$2.16*	$1.65*	$1.23*

* Significant at p < .05 level.

RevPAR for Deficient Hotels

Hotels that had at least one defect each in the exterior, the guest room, and the guest bath within six months of February 1990 were defined as deficient hotels, while the properties that did not have defects in all three of those areas during the same period were termed not-deficient hotels. I used the quality-assurance report issued nearest to February 1990 because it gave a snapshot of the condition of the hotels at the beginning of the study.

Based on this definition, 607 hotels comprising nearly 105,000 rooms were classified as deficient, and 528 hotels were classified as not deficient. I calculated and compared the average market-adjusted RevPARs for deficient hotels and not-deficient hotels to test for statistically significant differences. I then repeated the analysis with the same set of hotels for each of the six-month periods outlined above. To be clear, even if the deficient hotels were later found to have corrected their deficiencies, they remained in their original group.

Lost ground. The RevPAR for the deficient hotels was consistently lower than that of the not-deficient hotels for all six test periods. On average, the deficient hotels had a RevPAR nearly $3 less than not-deficient hotels. That average is cal-

EXHIBIT 3

Actual RevPAR differences between deficient and not-deficient hotels

Beginning date	Market-adjusted RevPAR difference	Market index	Actual RevPAR difference
February 1990	$2.78	0.967	$2.69
August 1990	$2.93	0.967	$2.83
February 1991	$3.12	0.968	$3.02
August 1991	$3.02	0.968	$2.92
February 1992	$3.06	0.966	$2.96
August 1992	$2.95	0.968	$2.86

Note: Figures are calculated for the six-month period following each date.

culated by multiplying the market-adjusted RevPAR difference by the price index to obtain the actual RevPAR difference for each of the six dates studied. Those differences were statistically significant at the .0001 level (see Exhibit 3).

Revenue Loss

By calculating the differences in RevPAR for each of the six-month periods, one can analyze the effect of property defects on revenue for the entire Holiday Inn Worldwide system or for an individual property. The effect on Holiday Inn Worldwide, of course, occurs because the bulk of its system royalties involves a percentage of rooms revenue from all franchised hotels. To calculate the financial impact on Holiday Inn Worldwide, for instance, I multiplied the RevPAR difference (between defective and not-defective hotels) by the number of rooms available for the time period to obtain the lost rooms revenue. That figure, in turn, is multiplied by the total fees prevailing in February 1990 of 6.42 percent of rooms revenue (comprising an average royalty of 3.78 percent, the average advertising fee of 1.64 percent, and the average reservation fee of 1.00 percent). I conducted this analysis for each of the six dates and carried the calculations forward for the six months following that date. For example, the daily RevPAR difference of $2.58 from February 1990 was used through July 1990. This calculation yields an estimate of $20 million in lost system revenue over the three-year period.

More losses. The above calculation does not include lost revenues for the individual hotels. That figure is the product of the daily RevPAR differential (on average, $2.80 per day), the number of rooms (on average, 200 rooms), and the number of days in a year. Based on this, the revenue loss for the average deficient hotel would be about $560 per day, or about $204,400 per year.

Defects Cost Money

This study demonstrates a direct relationship between product quality and an operation's financial performance, when product quality is gauged by the level of facility defects. Moreover, the study indicates that defects in the exterior, the guest room, and the guest bath are critical, while problems in other areas of the hotel, such as the lounge, the recreation facilities, and the meeting space did not have a significant effect on RevPAR. Even worse, the hotels recorded the greatest number of defects in the three critical areas. To repeat, the defective hotels in my sample recorded a RevPAR of approximately $2.80 less than hotels that did not have defects. This difference was consistent over time and represents an annual revenue shortfall of approximately $200,000 per deficient hotel. The study also indicates where hotels might best invest their capital-improvement and maintenance funds. What seems to count is the exterior, the guest rooms, and the guest bath. ■

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