

Cornell University School of Hotel Administration

The Scholarly Commons

Center for Hospitality Research Publications

The Center for Hospitality Research (CHR)

2-13-2017

What Matters Most to Your Guests: An Exploratory Study of Online Reviews

Jie J. Zhang

Gustavson School of Business, University of Victoria

Rohit Verma

Cornell University, rv54@cornell.edu

Follow this and additional works at: <https://scholarship.sha.cornell.edu/chrpubs>



Part of the [Hospitality Administration and Management Commons](#)

Recommended Citation

Zhang, J. J., & Verma, R. (2017). What matters most to your guests: An exploratory study of online reviews. *Cornell Hospitality Report*, 17(4), 3-13.

This Article is brought to you for free and open access by the The Center for Hospitality Research (CHR) at The Scholarly Commons. It has been accepted for inclusion in Center for Hospitality Research Publications by an authorized administrator of The Scholarly Commons. For more information, please contact hotellibrary@cornell.edu.

If you have a disability and are having trouble accessing information on this website or need materials in an alternate format, contact web-accessibility@cornell.edu for assistance.

What Matters Most to Your Guests: An Exploratory Study of Online Reviews

Abstract

An examination of over 95,000 reviews and ratings for 99 independent, high-end hotels and resorts highlights the importance of the hotel industry's core product, namely, consistently excellent service supporting a comfortable, well-appointed room. Based on reviews and ratings posted on TripAdvisor, Expedia, and Booking.com, the analysis found that properties with the most consistent service also had the highest ratings, while hotels with inconsistent scores also had relatively low ratings. Quantitative analysis revealed that service and rooms were overwhelmingly the most important aspects of these high-end properties, while facilities, location, and amenities moved the meter far less. A qualitative analysis of the words used in the reviews again highlighted the essential nature of service and rooms, both for high-rated and low-rated properties. Top-rated reviews included such words as friendly, helpful, excellent, and beautiful, while words that appeared only in the low-rated reviews included didn't, bathroom, front, desk, and price, hinting at issues that resulted in those lower ratings. The findings can be applied by management of both high- and low-rated hotels to avoid distractions and to focus on hotels' fundamental purpose of providing excellent service and a good night's sleep.

Keywords

high-end hotels, resorts, amenities, online reviews, Cornell, service rating

Disciplines

Hospitality Administration and Management

Comments

Required Publisher Statement

© [Cornell University](https://www.cornell.edu/). Reprinted with permission. All rights reserved.



What Matters Most to Your Guests: An Exploratory Study of Online Reviews

By Jie Zhang and Rohit Verma

EXECUTIVE SUMMARY

An examination of over 95,000 reviews and ratings for 99 independent, high-end hotels and resorts highlights the importance of the hotel industry's core product, namely, consistently excellent service supporting a comfortable, well-appointed room. Based on reviews and ratings posted on TripAdvisor, Expedia, and Booking.com, the analysis found that properties with the most consistent service also had the highest ratings, while hotels with inconsistent scores also had relatively low ratings. Quantitative analysis revealed that service and rooms were overwhelmingly the most important aspects of these high-end properties, while facilities, location, and amenities moved the meter far less. A qualitative analysis of the words used in the reviews again highlighted the essential nature of service and rooms, both for high-rated and low-rated properties. Top-rated reviews included such words as friendly, helpful, excellent, and beautiful, while words that appeared only in the low-rated reviews included didn't, bathroom, front, desk, and price, hinting at issues that resulted in those lower ratings. The findings can be applied by management of both high- and low-rated hotels to avoid distractions and to focus on hotels' fundamental purpose of providing excellent service and a good night's sleep.

ABOUT THE AUTHORS

Jie J. Zhang, DBA, is an assistant professor of service operations management at the Gustavson School of Business, University of Victoria. Jie is primarily interested in improving the performance of service organizations while contributing to a sustainable



future. Jie's research has investigated topics such as environmental performance of service operations, learning and service innovation, service triads, and professional service life cycle. Her work has been published in journals such as the *Journal of Operations Management*, *Service Science*, *Journal of Service Management* and *Cornell Hospitality Quarterly*. Through her empirical research efforts, Jie strives to enhance the performance of service systems by contributing to knowledge on the value-creation interactions (i.e., coproduction) between service organizations and their customers. Jie's teaching reflects her interest in value co-creating service systems. Jie previously taught at the University of Vermont in the U.S., and particularly enjoyed being part of the successful launch of the highly innovative Sustainable Entrepreneurship MBA (SEMBA) program at UVM. Before joining academia, Jie worked as the Systems Manager of the Division of Applied Mathematics, Brown University, for nine years.

Rohit Verma, Ph.D., is the dean of external relations for the Cornell College of Business at Cornell University, the executive director of the Cornell Institute for Healthy Futures (<http://ihf.cornell.edu/>), and the Singapore Tourism Board Distinguished Professor in Asian Hospitality Management at the Cornell School of Hotel Administration (SHA). Prior to his appointment at Cornell



University, Verma was the George Eccles Professor of Management at the David Eccles School of Business, University of Utah. He has taught undergraduate, MBA, and executive courses at several universities around the world, including DePaul University, German Graduate School of Business and Law, Helsinki School of Economics, Indian School of Business, Korea University, and the University of Sydney. Verma has published over 70 articles in prestigious academic journals and has also written numerous reports for the industry audience. He regularly presents his research, participates in invited panel discussions, and delivers keynote addresses at major industry and academic conferences around the world. He is co-author of the *Operations and Supply Chain Management for the 21st Century*

textbook, and co-editor of *Cornell School of Hotel Administration on Hospitality: Cutting Edge Thinking and Practice*, a professional reference book that includes works of several of his colleagues at Cornell. Verma has received several research and teaching awards including CHR's Industry Relevance Award and SHA's Masters Core Class Teaching Award; the Skinner Award For Early Career Research Accomplishments from the Production and Operations Management Society; the Spirit of Inquiry Award, the highest honor for scholarly activities within DePaul University; the Teaching Innovation Award from DePaul University; and the Professional Service Award from DESB University of Utah. He received his Ph.D. and MS degrees from the University of Utah. He received his Btech degree from the Indian Institute of Technology.

This report includes information from members of Preferred Hotels & Resorts, the world's largest independent hotel brand, representing more than 650 distinctive luxury hotels, resorts, and residences in 85 countries across the globe (<https://preferredhotels.com>). To help ensure the highest levels of customer satisfaction, every property within the brand's portfolio is required to maintain the high quality standards and unparalleled service levels required by the Preferred Hotels & Resorts Integrated Quality Assurance Program, a customized social media tool that takes hotel quality assurance into the next generation, combining the traditional site inspection by a professional third-party expert with a customized social media element that provides real-time quality assessment scores.

What Matters Most to Your Guests: An Exploratory Study of Online Reviews

By Jie Zhang and Rohit Verma

The hotel industry is one of many where guests rely on online reviews to make purchase decisions.¹ Unlike many other businesses, however, a group of third-party sites, the online travel agents (OTAs), host hotel reviews and ratings (not to mention distribution). There's no doubt that consumers' reviews are important both to the industry and its guests. Research has, for example, shown a robust positive link between online reputation and increase in ADR, occupancy, and RevPAR.² Guest reviews also can provide a wealth of information to hotel managers regarding what elements of a guest stay are most important, provided one can analyze the guests' comments. Given that the reviews carry the voice of the customers in the form of unsolicited feedback on hotel operations,³ we investigate which aspects of the perceived guest experience have the greatest effect on guests' assessment of their hotel stay, by considering both numerical rating scores and words used in the reviews.

¹ Beverley A. Sparks and Victoria Browning, "The Impact of Online Reviews on Hotel Booking Intentions and Perception of Trust," *Tourism Management* 32, no. 6 (2011): 1310–23.

² Chris Anderson, "The Impact of Social Media on Lodging Performance," *Cornell Hospitality Report* 12, no. 15 (2012): 6–11; and Chris K. Anderson and Benjamin Lawrence, "The Influence of Online Reputation and Product Heterogeneity on Service Firm Financial Performance," *Service Science* 6, no. 4 (2014): 217–28.

³ Hyun Jeong Han et al., "What Guests Really Think of Your Hotel: Text Analytics of Online Customer Reviews," *Cornell Hospitality Report* 16, no. 2 (2016): 3–17; and Stuart E. Levy, Wenjing Duan, and Soyoung Boo, "An Analysis of One-Star Online Reviews and Responses in the Washington, DC, Lodging Market," *Cornell Hospitality Quarterly* 54, no. 1 (2013): 49–63.

Hotel properties: geographic distribution and size

Continent	Small (<100 rooms)	Medium (101-250 rooms)	Large (>250 rooms)	Total
Europe	13	18	12	43
North America	3	13	22	38
Asia	—	4	12	16
Africa	—	—	1	1
South America	—	1	—	1
Grand Total	16	36	47	99

For this analysis, we were assisted by Preferred Hotels & Resorts to collect 95,500 online ratings and reviews of 99 of its independent hotels posted over a twelve-month period on three top OTAs—TripAdvisor, Expedia, and Booking.com. Although the hotels are independent, they agree to follow the same quality standards as part of their membership association. By focusing on independent operating units in a well-defined segment with similar quality standards, we control to some extent the variations in guest preferences and demand, although the hotels and resorts range in size from under 100 rooms to well over 250 keys. The properties' similarities allow us to focus on the effects of specific operational drivers on guests' perceptions of their experience. In this study, we are primarily interested in finding the answers to three questions:

What are the drivers that matter the most in terms of guests' evaluation of their experience?;

How do these drivers relate to consumer review scores at the property level?; and

What are the identifiable consumer issues found in the review text?

Although online reviews are widely viewed as reliable, we first examine studies on the reliability of the online reviews and ratings in assessing performance. Then, our quantitative analysis uses regression to assess the effects of key operational drivers on consumer review ratings, while our qualitative study uses text analytics to uncover common consumer concerns and to infer what aspects of the guests' stay have the greatest effect on ratings.

Online Reviews as a Valuable Source of Feedback

Online reviews continue to rise in importance, having become second only to pricing as an element in consum-

ers' purchase decision process.⁴ Moreover, consumers have become increasingly adept at evaluating the veracity of online reviews by triangulating multiple sources and their own contextual knowledge.⁵ Because it's clear that hotels can apply online reviews for performance improvement and revenue enhancement, we investigate ways that management can analyze the rich and dynamic online review data for insights on aspects of the stay that contribute to high guest satisfaction and gaps that can be closed.

Although online hotel ratings have been found to be largely credible,⁶ it is worth noting sources of potential biases in online data, particularly fraudulent reviews, written by people who have not actually experienced the service.⁷ Another source of bias is self-selection. Even if a review is genuine, the comments represent the views of customers who have chosen the online platform to share their opinions publicly. That group may be different in some way from those who do not post reviews. We also note that guests have a diverse interpretation of rating scales,⁸ which leads to heterogeneous information.

⁴ Bassig Migs, "2016 Trends in Hospitality and Travel," January 18, 2016, <http://www.reviewtrackers.com/2016-trends-hospitality-travel/>.

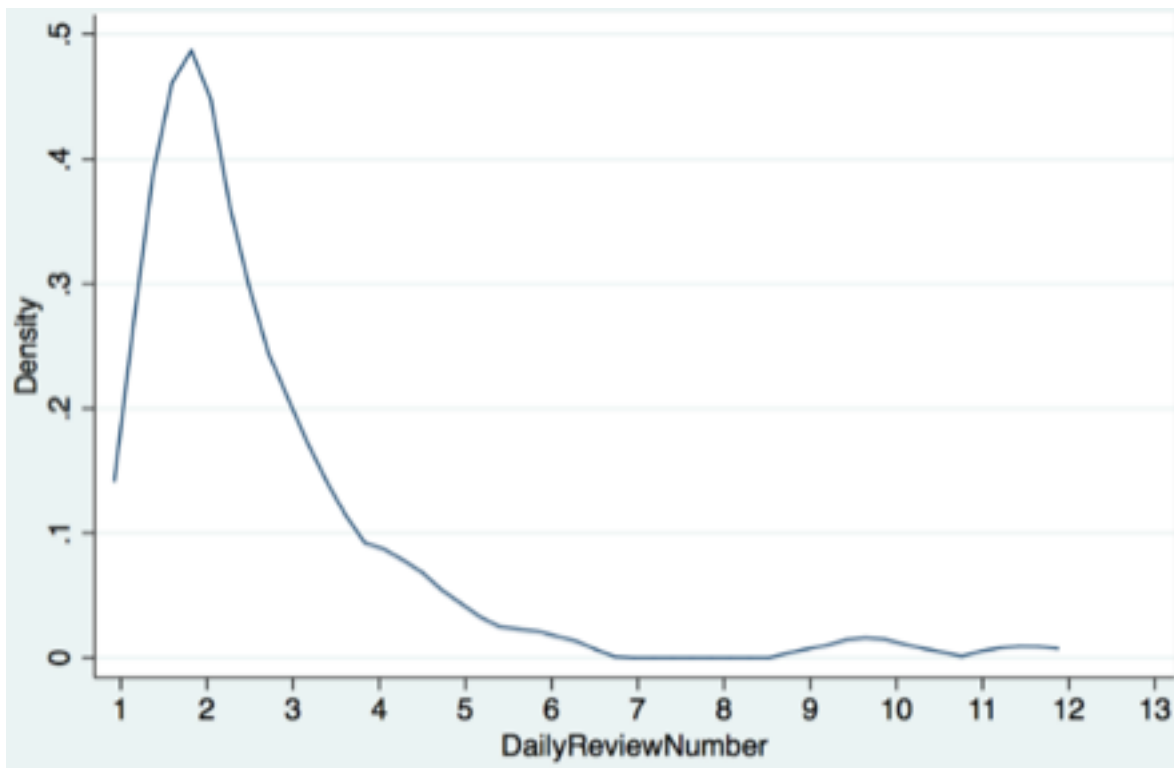
⁵ Russell S. Winer and Peter S. Fader, "Objective vs. Online Ratings: Are Low Correlations Unexpected and Does It Matter? A Commentary on de Langhe, Fernbach, and Lichtenstein," *Journal of Consumer Research* 42, no. 6 (2016): 846–49.

⁶ Peter O'Connor, "User-Generated Content and Travel: A Case Study on TripAdvisor. Com," *Information and Communication Technologies in Tourism 2008*, 2008, 47–58; and Julian K. Ayeh, Norman Au, and Rob Law, "Do We Believe in TripAdvisor? Examining Credibility Perceptions and Online Travelers' Attitude toward Using User-Generated Content," *Journal of Travel Research*, 2013, 47287512475217.

⁷ Eric T. Anderson and Duncan I. Simester, "Reviews without a Purchase: Low Ratings, Loyal Customers, and Deception," *Journal of Marketing Research* 51, no. 3 (2014): 249–69.

⁸ Russell S. Winer and Peter S. Fader, "Objective vs. Online Ratings: Are Low Correlations Unexpected and Does It Matter? A Commentary on de Langhe, Fernbach, and Lichtenstein," *Journal of Consumer Research* 42, no. 6 (2016): 846–49.

Frequency distribution of the hotel properties (reviews per day)



Design of the Study

We selected the 99 properties from Preferred Hotels & Resorts' international portfolio on the basis that the selected hotels received a steady stream of daily reviews on one of the three OTAs (Booking, Expedia, or TripAdvisor) between May 1, 2015, and April 30, 2016. For this study, we focused only on reviews written in English, leaving a final sample of 95,500 reviews. This language restriction slightly reduced the number of reviews per property, yet even the hotel with the fewest reviews averaged about 1.3 English reviews per day minimum. We therefore are reasonably confident that these properties have established a solid online reputation.

Exhibit 1 shows the geographic distribution of the properties in the study, grouped by property size. The majority of the hotel properties in the study are located in Europe and North America, and nearly half of the hotels and resorts have more than 250 rooms. This is consistent with the hotel group's focus on luxury properties.

Exhibit 2 shows the frequency distribution of total daily English reviews from the three OTA sites. The mode is around two such reviews per day, while a small number of properties received more than six reviews per day. The practical outcome of having such a strong stream of

reviews is that we can continuously collect near real-time information on customer service experiences, which is not possible with post-stay surveys and mystery shoppers, for instance.

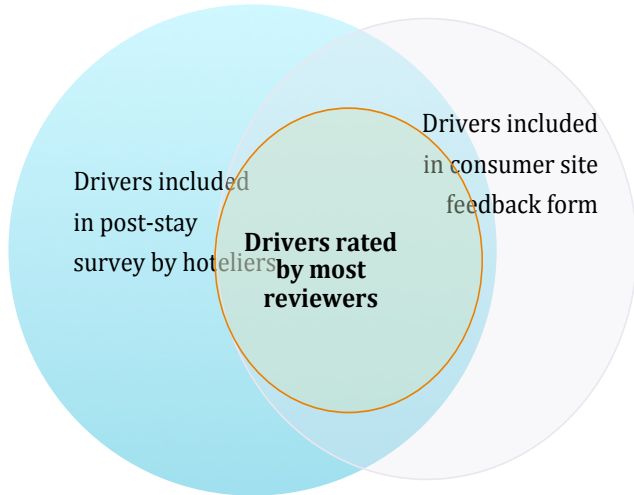
What Matters Most to Guests

To identify the drivers that matter the most in terms of guests' evaluation of their experience, we adopt the following process. We started with a detailed list of operational drivers typically included in the post-stay questionnaires solicited by the hoteliers, and compared that set to those included in the consumer site review feedback forms. We kept items in the intersection of those two sets that are most frequently commented by reviewers. As illustrated in Exhibit 3, the area where all three circles overlap represents the drivers that matter the most to the customers, given the available data.

Typical after-stay questionnaires are highly structured and detailed about the guest's experience in the hotel. Populating the left-hand circle in Exhibit 3, our initial list of drivers rated include front desk, ease of check-in, concierge bell desk (check-in), location and building, room, food and beverage, housekeeping, room service, service,

EXHIBIT 3

Drivers that matter most to guests



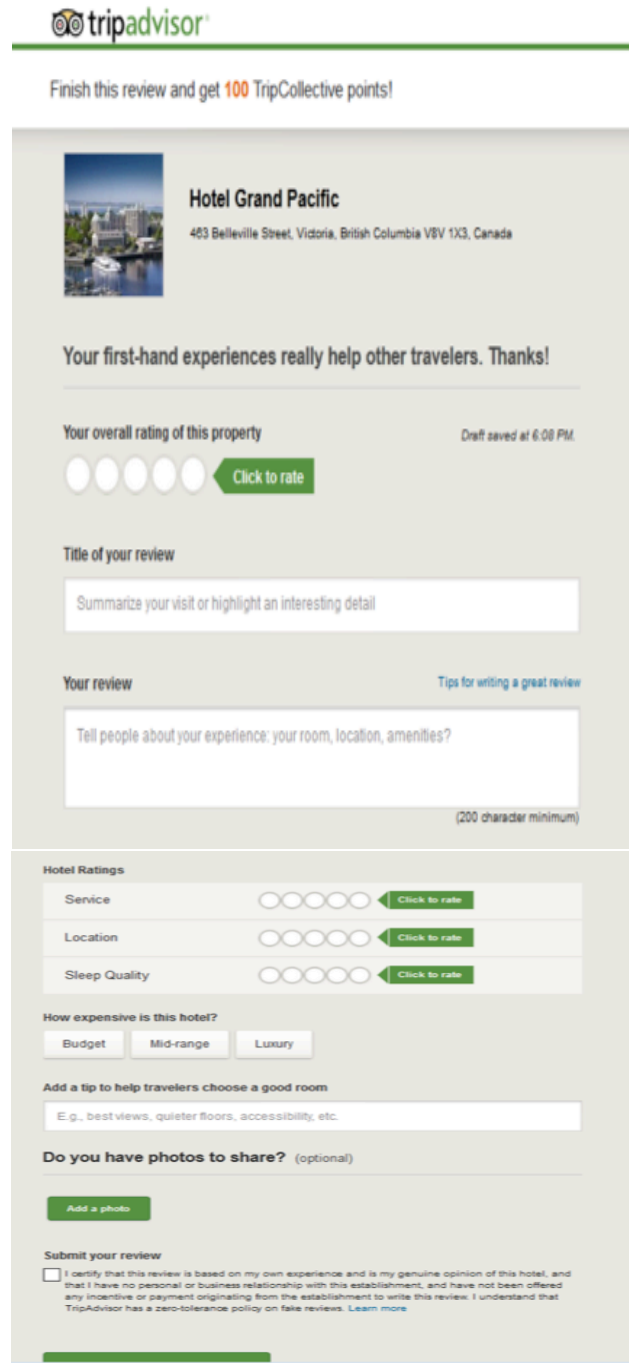
amenities and facilities, ease of check-out, and concierge bell desk (check-out).

The OTAs encourage reviews by providing incentives and streamlined feedback forms. As an example, Exhibit 4 shows the review submission interface on TripAdvisor. Customers evaluate their experience by providing an overall rating score, writing an open-ended review, and giving subcategory ratings for service, location, and sleep quality. Booking and Expedia provide similar mechanisms that differ slightly in the choice and wording of the specific areas to be rated.

Compiling the review categories from the three OTAs, we listed twelve review categories, four of which were rated most commonly: namely, service, room, location and building, and amenities and facilities. As shown in Exhibit 5, the number of responses to the twelve categories varies substantially, and half of the reviews gave no rating to any of the twelve subcategories. For instance, we observe that half of the reviews included a rating for service (47,337 out of the 95,500 reviews, or 49.5 percent), while just under 6 percent of the consumers gave a separate rating for check-in or checkout. Although both the review form design and the consumers' decisions during the submission of the review could have contributed to the difference in number of ratings, it is clear that the top four rated areas identified above account for the most memorable experience for most guests.

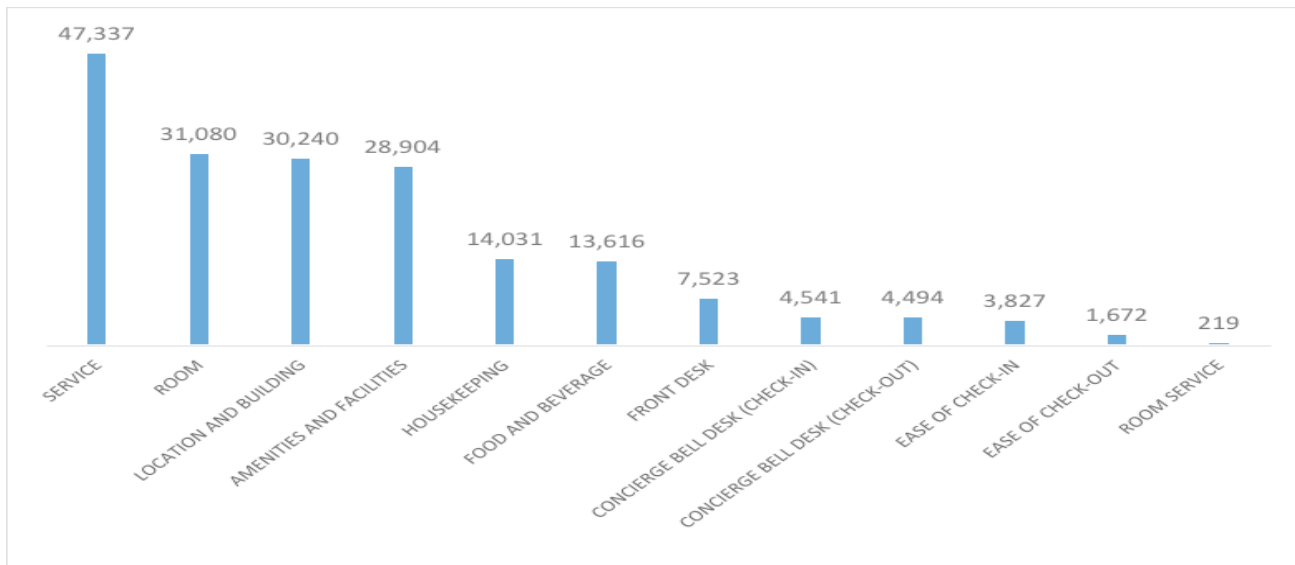
EXHIBIT 4

TripAdvisor "write a review" interface



Note: This exhibit shows the relevant sections of the TripAdvisor page. The full page includes additional data for customer reviews.

Number of consumer responses on specific operational areas (total of 95,500 reviews)



Note: 50 percent of the reviews gave no rating to any of the twelve subcategories.

Impact of the Drivers on Overall Rating

Each review has two overall ratings: Quantitative-Score, which measures the overall experience at a hotel property; and SentimentScore, which measures the overall sentiment of a review based on a proprietary algorithm.⁹ Out of the 95,500 reviews, we removed 808 reviews that contained words that were outside the scope of the sentiment engine's analysis.

Given the significant variation in the number of responses across the subcategories listed in Exhibit 5, we explored whether the overall evaluations differ between those from reviewers who chose to provide subcategory ratings and those by customers who skipped the subcategory ratings. Reviewers who provided subcategory ratings appeared to be more critical in their overall evaluations. In that regard, on average, the customers who gave a rating to the service subcategory marked their

⁹ When a review is sent for sentiment analysis, the Sentiment Engine breaks the entire review into sentences and then examines each word of the sentence. As it comes across a positive and negative keyword, it assigns the corresponding score based on their polarity, that is, positive (1) or negative (-1) to those keywords. The sentiment engine also uses the modifiers to assign weight or points to the keyword. Thus, Very Good would be 2 points, and Good, 1 point. Neutral keywords like "is," "and," and "the" are given a zero-degree sentiment. Once the entire review has been analyzed (all sentences), the Sentiment Engine takes the average of all the degree sentiments and assigns the review an overall Sentiment score. The sentiment engine presently processes eight languages. Reviews containing words in languages out of the scope of the engine do not get analyzed and get assigned a score of 0.

overall quantitative score slightly lower (8.61 out of 10) than those who skipped the rating on service (quantitative score averaging 8.69). An even larger gap exists for the sentiment score. The mean of sentiment score is 7.11 for customers who rated service, as compared to 7.55 for those who didn't. This observation led us to focus on the set of reviews that have both the individual subcategory ratings (that is, service, room, location and building, and amenities and facilities) and the overall rating, because we wanted to assess how the ratings in these specific operational areas relate to the satisfaction level expressed by the consumers. As mentioned earlier, we recognize that the reviews and ratings were made by customers who chose to provide evaluations based on their memory of past lodging experience. These subcategories may have served as cues that helped these customers remember more about their stay and offer clues to the drivers of the overall evaluations.¹⁰

Consequently, the quantitative analysis described below focuses primarily on the effects of the hotel subcategory ratings on the overall ratings as measured by the quantitative score and sentiment score. Given that there are multiple reviews for each property during the study period, we distinguish between two levels of analysis: the individual reviews themselves and the hotel property that the reviews describe. With these nested data, we use the

¹⁰ Keller, Kevin Lane. "Memory factors in advertising: The effect of advertising retrieval cues on brand evaluations." *Journal of Consumer Research* 14.3 (1987): 316-333.

The effect sizes of the subcategory ratings on the overall rating using two-level hierarchical regression

Independent Variables	(1) QuantitativeScore	(2) SentimentScore
Room	0.281***	0.234***
Service	0.253***	0.244***
Amenities&Facilities	0.113***	0.121***
Location&Building	0.054***	0.087***
Properties with < 100 rooms	0.411**	0.128
Properties with 100-250 rooms	0.260*	0.131*
Intercept	3.803**	2.418***
Mixed-effects ML regression model statistics	Wald chi2(6) = 2449.18 Prob > chi2 = 0.0000	Wald chi2(6) = 4219.37 Prob > chi2 = 0.0000

Note: * p -value < 0.05, ** p -value < 0.01, *** p -value < 0.001; fluctuated greatly, ranging from 6.52 to 8.5 during the 12-month period.

following two-level hierarchical regression model for the overall rating score of the j th review on the i th hotel:

$$\begin{aligned} \text{Overall Rating}_{ij} \\ = \beta_0 + \beta_1 \text{Service}_{ij} + \beta_2 \text{Room}_{ij} + \beta_3 \text{AmenitiesFacilities}_{ij} + \beta_4 \\ \text{LocationBuilding}_{ij} + \beta_{(5-6)} \text{HotelSizeDummy}_{ij} + u_{i0} + \varepsilon_{ij} \end{aligned}$$

Exhibit 6 shows the effect sizes estimated by the hierarchical regression model. Column 1 shows the results for dependent variable QuantitativeScore. The model's likelihood test against a linear model is 455.77 with a p -value < 0.0001, providing evidence of cross-hotel variation. Column 2 shows the results for SentimentScore as the dependent variable. This model's likelihood test against a linear model is 132.27, again with a p -value < 0.0001, also providing evidence of cross-hotel variation. We note that the effect sizes reported in column 1 and column 2 are comparable, which suggests similar driving forces behind the ratings of the overall experience and sentiment.

QuantitativeScore. In the case of QuantitativeScore of online reviews, what matters most is room, followed closely by the rating on service (column 1). For every point increase in these areas, there is an increase in QuantitativeScore of 0.28 point (for the room) and 0.25 point (for service). In contrast, location and building have the least impact on QuantitativeScore. This is not surprising given that the customers generally are clear about a property's location and facilities when they book a hotel. Later, our qualitative analysis highlights another facet of this relationship, namely, that service is more important than the facilities.

We also observe systematic variation between large and small hotels in QuantitativeScore. Small hotels received better ratings than large hotels. Compared with the hotels with 250 rooms or more, which is the reference

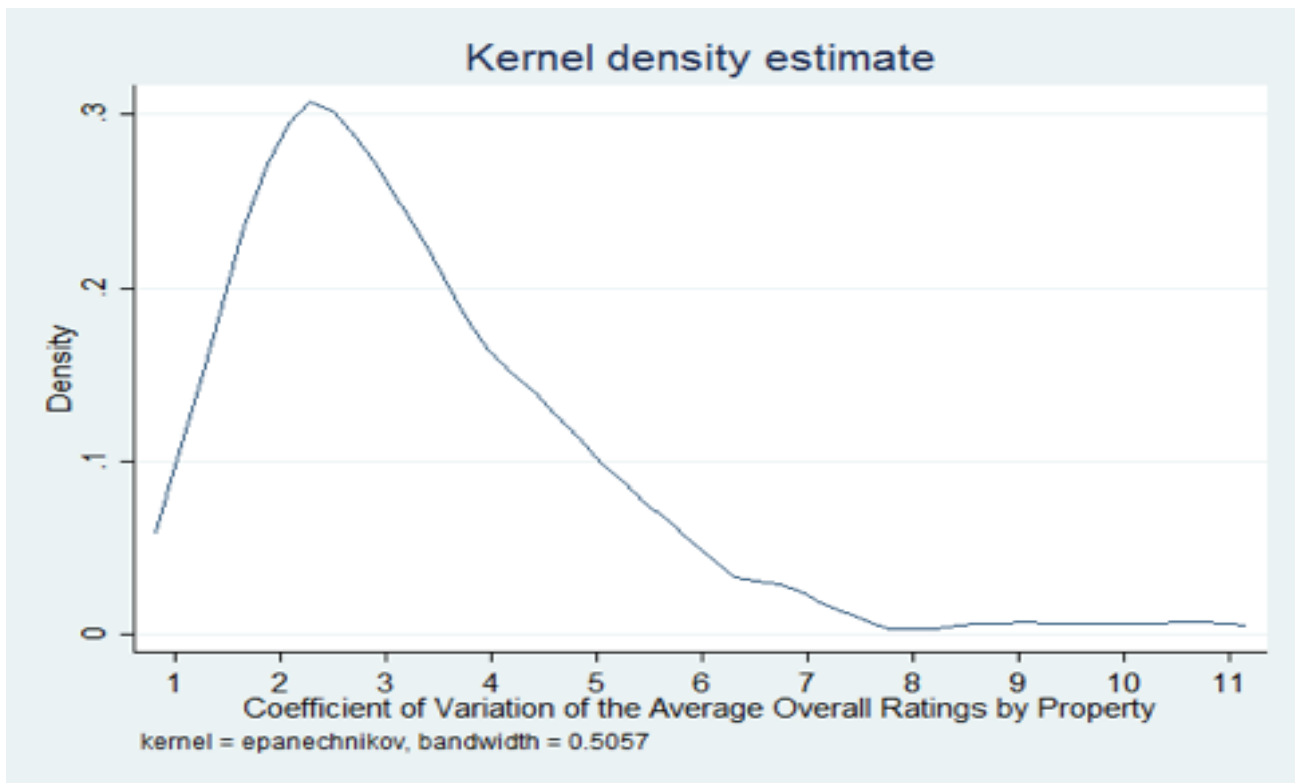
group, hotels with fewer than 100 rooms on average were rated 0.411 point higher, while medium size hotels were rated .260 point higher than large hotels in QuantitativeScore.

SentimentScore. Room and service also contribute heavily to SentimentScore, with service having only a slightly greater effect than room rating (column 2). For every one-point increase in either of these two areas, there is roughly a 0.24-point increase in SentimentScore. On average, guests who stayed in hotels with fewer than 100 rooms reported sentiment scores not significantly different from those staying in hotels with more than 250 rooms, the reference group, while medium size hotels on average scored 0.131 point higher in SentimentScore.

Consumer Preferences as Seen in the Review Text

Our qualitative analysis explores reviewers' attitudes regarding the resorts' attributes, based on comments found in the reviews. We tally the words used in the reviews and compare the result with overall quantitative scores to determine which attributes are associated with stable and positive reviews, and which aspects are more commonly mentioned in poor reviews. Examination of the subcategory ratings allows us to explore the factors that contribute to high customer satisfaction in specific areas, and to highlight areas that need particular attention. For example, we can compare the frequently mentioned features in hotels with high service ratings against those with low ratings.

Variability in the overall quantitative scores at the hotel level over 12 months



Consumer Attitudes Found in Stable and Unstable Reviews

To gauge a hotel's service consistency, we consider the variation in review scores during the study period. Consistent reviews may be favorable for a hotel, but only if those reviews contain high scores. When a hotel's reviews are relatively consistent, we can infer stable underlying service delivery processes, whether strong or weak. In this study, the consistent hotels generally recorded higher overall scores. Consumer issues emerging from low-scoring reviews or frequent complaints suggest management priorities for process changes. Inconsistent reviews tend to be related to poor overall ratings in our study, and we consequently suggest that highly variable reviews, where hotels seem to suffer from unstable and unpredictable service delivery processes, require urgent management attention.¹¹ We use coefficient of variation (CV) of the overall quantitative score to measure the consistency of the reviews a hotel accumulated over the study period. The coefficient of variation is the ratio of the

¹¹ Variation reduction is a critical step towards understanding the processes, stabilizing them, and detecting deviation from the standard operating procedures.

standard deviation to the mean, which is a unit-less measure that allows a meaningful comparison of the level of variability in the overall quantitative scores across hotels.

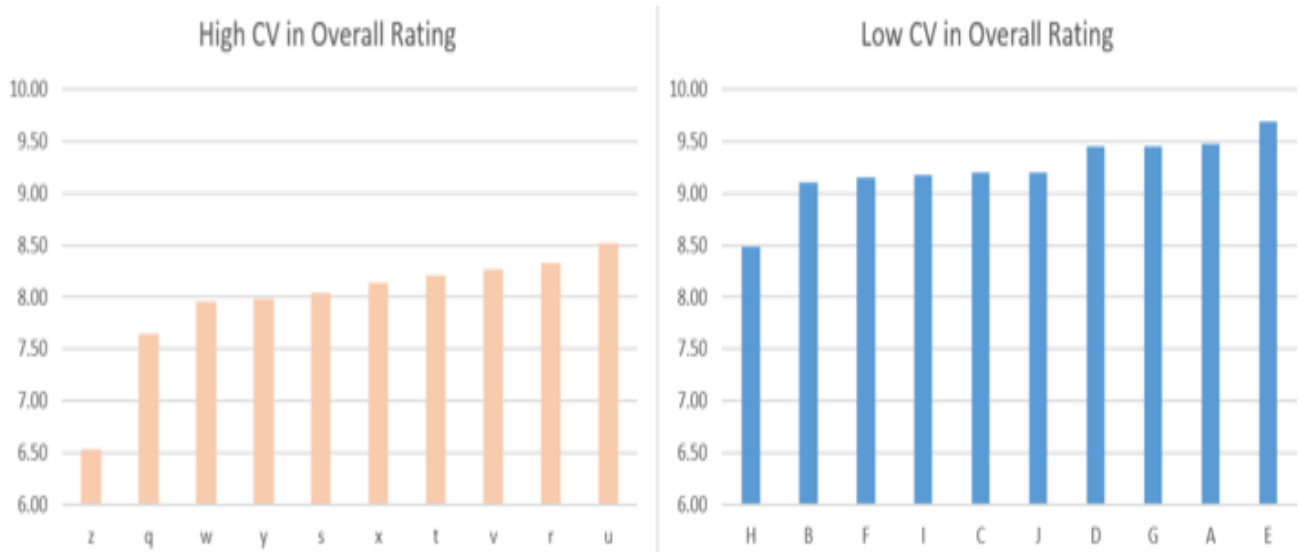
We calculate the CV for each hotel over the twelve-month period using this equation:

$$CV_j = \frac{100 \times \text{stdev}(\text{monthly average of the quantitative scores for hotel } j)}{\text{average}(\text{monthly average of the quantitative scores for hotel } j)}$$

Exhibit 7 shows the CV frequency distribution for the overall quantitative score for the 99 hotel properties in the sample. We observe in Exhibit 7 that about 60 percent of the properties achieved a low variability ($CV < 3.3$), indicating relatively consistent overall quantitative scores over the twelve-month period. It is worth noting that the mean overall quantitative score for nine of the ten hotels with the lowest CVs was 9.0 or better. On the other end of the spectrum, the average monthly quantitative scores of the 14 hotels with CV above 5 fluctuate greatly, ranging from 6.52 to 8.5 during the same period.

Exhibit 8 contrasts the average overall quantitative scores of the ten hotels having the highest CV with those of the ten hotels with the lowest CV. It is clear from Exhib-

Average overall ratings by hotels: high CV group vs. low CV group



it 8 that hotels in the high CV group were rated consistently lower than those in the low CV group. It appears that the low score reviews are offsetting the positive reviews, thus detracting from the property's online reputation.¹² A high CV also suggests high variation in the execution of the service processes, with the likelihood that the high CV group suffers from poor (or at best inconsistent) service delivery and weak configuration of the service features. The low CV group, on the other hand, can benefit from the consumer commentaries regarding how to further optimize their service design.

We see the low CV group as serving as a center of excellence where we can potentially identify consumer preferences for better service configuration. Given that it is cumbersome to list all the words mentioned in the reviews, we list selected top words mentioned in reviews that received a high overall score (greater than 9 on a scale of 10) for the ten hotels in the low CV group (see Exhibit 9).

The text analysis first confirms that service and room are the subcategories that receive the most reviewer attention. It is important to note that these reviewers are highly satisfied customers who shared their stories by elaborating on the personal experience, memories, and emotions associated with their stay.¹³ The text analysis results complement the quantitative analysis by highlighting the

¹² Frederick F. Reichheld, "The One Number You Need to Grow," *Harvard Business Review* 81, no. 12 (2003): 46–55.

¹³ As suggested in: B. Joseph Pine and James H. Gilmore, "Welcome to the Experience Economy," *Harvard Business Review* 76, no. 6 (1998): 97–105; and Sriram Dasu and Richard B. Chase, "Designing the

importance of operational areas that were infrequently scored by the customers but played a significant role in influencing overall satisfaction, including food and beverage and recreational facilities.

Comparing Consumer Preferences Based on Service Ratings

Because the quantitative analysis suggests that service is the top driver of a hotel's overall quantitative score, we examined the top words in reviews for hotels that scored high for service (4,579 hotels that scored between 9 and 10, about 10 percent of reviews) and the 5,337 (or just over 11 percent) that scored poorly (4 or below). Exhibit 10 lists the top 33 words for each group, based on the number of occurrences in the reviews.

We first observe a strong overlap in the words that appear in both favorable and unfavorable reviews, as the two lists have 23 words in common. We can confidently conclude that these descriptors are universally important for hotel guests. They include staff, comfortable, bed, clean, room, good breakfast, memorable restaurant experience, and recreational facilities, such as the pool. Many of these words also appear in the reviews of the consistently high-rated hotels, as shown in Exhibit 9.

On the other hand, words that appeared in the positive reviews but didn't get mentioned in the poor reviews include friendly, helpful, excellent, beautiful, perfect, recommend, lovely, wonderful, amazing, and definitely.

Soft Side of Customer Service," *MIT Sloan Management Review* 52, no. 1 (2010): 33.

Words most frequently mentioned in high score reviews for properties with low variability in rating (number of reviews = 8,562)

Word	Total Occurrence	Number of Reviews that Contain the Word*
hotel	8768	4246
staff	4406	3522
great	4348	2720
room	4055	2554
location	2870	2427
stay	3094	2265
exceptional	2279	2240
service	2162	1615
friendly	1710	1542
rooms	1708	1458
excellent	1854	1441
helpful	1488	1386
breakfast	1593	1353
wonderful	1519	1305
good	1676	1251
comfortable	1233	1113
nice	1438	1111
stayed	1251	1111
beautiful	1170	999
view	1223	978
pool	1177	974
clean	1034	959
perfect	1075	917
amazing	1162	913
time	1128	907
food	1048	904
place	1029	870
restaurant	964	846

Note: * Words most frequently mentioned in reviews on low-variability high-rated properties (number of reviews = 8,562).

In that list of words, we see the importance of personal interactions that engender emotional responses in creating memorable customer experiences. Another sore point that emerges in poor reviews is the bathroom.

Managerial Implications

Not surprisingly, the key drivers in customer satisfaction remain service and room. These two factors dominate other factors that often have diverted management attention, related to location and building and to amenities and facilities. This pattern holds for both the quantitative

score and sentiment score, after controlling for hotel size. Hoteliers should therefore focus on the operational areas that speak volumes about service and room, such as appropriately friendly service throughout the property, as well as the quality of beds and ensuring a good night's sleep for the guest. The traditional lodging service that delivers a good night's sleep in a clean, well-functioning room, together with availability of an excellent breakfast, remains central to customer satisfaction.

A second implication is that operational consistency is extremely important in a hotel's overall rating. Thus,

focusing on avoiding operational “kinks” can be more important than looking for the occasional “wow” factor. Hotels that received highly variable review scores during the twelve-month period scored much lower in the overall ratings. Needless to say, frequent complaints about a specific area, such as bathroom or breakfast, point to the issues that require immediate attention.

Third, the descriptors identified in the review text express the consumers’ desire for solid delivery of core hotel service offerings combined with favorable experiences consisting of personal and emotional interactions with the

staff and a sense of well-being. As potential guests peruse the online reviews, descriptions related to these two aspects will have an impact on their booking decisions and expectations.

In conclusion, we want to once again emphasize that despite amenities creep, architectural fads, and numerous brand permutations, the core of the hotel business remains creating a positive and memorable stay by focusing on the fundamentals of hotel operations and meaningful relationship building with guests. ■

EXHIBIT 10

Words most frequently mentioned in positive reviews (service subcategory at 9 or above, N=4,579) vs. those in negative reviews (service subcategory at 4 or below, N=5,337)

Service rated 9 or above			Service rated 4 or below		
Word	Total Occurrence	Number of Reviews that Contain the Word	Word	Total Occurrence	Number of Reviews that Contain the Word
staff	4276	3770	hotel	6612	3076
hotel	5310	2833	room	6150	2913
great	3101	1953	location	2299	1825
room	2742	1940	staff	2171	1620
location	2233	1848	good	2068	1497
friendly	1937	1821	service	2073	1425
helpful	1693	1629	stay	1913	1411
stay	1977	1533	great	1910	1380
excellent	1849	1424	rooms	1856	1309
good	1850	1265	nice	1573	1151
nice	1653	1207	breakfast	1414	1120
rooms	1240	1091	expensive	1188	1070
clean	1116	1036	get	1328	976
service	1200	944	time	1228	930
breakfast	1049	931	night	1245	890
comfortable	961	876	food	1065	838
food	853	769	stayed	907	780
beautiful	841	696	clean	855	758
stayed	738	665	check	1082	743
perfect	715	586	day	989	741
recommend	599	579	pool	1038	701
lovely	702	559	bed	860	662
wonderful	647	559	didn't	811	633
amazing	683	539	front	830	632
time	661	539	view	850	622
view	656	536	price	713	618
pool	640	532	place	736	597
place	615	525	bathroom	678	586
definitely	485	465	restaurant	730	581
restaurant	505	455	desk	792	579
bed	459	420	comfortable	616	572
restaurants	436	414	area	678	539
experience	473	401	experience	638	525

Center for Hospitality Research Publication Index

chr.cornell.edu

2017 Reports

Vol. 17 No. 3 Hotel Brand Standards: How to Pick the Right Amenities for Your Property, by Chekitan S. Dev, Rebecca Hamilton, and Roland Rust

Vol. 17 No. 2 When Rules Are Made to Be Broken: The Case of Sexual Harassment Law, by David Sherwyn, J.D., Nicholas F. Menillo, J.D., and Zev J. Eigen, J.D.

Vol. 17 No. 1 The Future of Hotel Revenue Management, by Sheryl E. Kimes, Ph.D.

CREF Cornell Hotel Indices

Vol. 6 No. 1 Cornell Hotel Indices: Fourth Quarter 2016: Hotels Are Getting Costlier to Finance, by Crocker H. Liu, Ph.D., Adam D. Nowak, Ph.D., and Robert M. White, Jr.

2016 Reports

Vol. 16 No. 28 The Role of REIT Preferred and Common Stock in Diversified Portfolios, by Walter I. Boudry, Ph.D., Jan A. deRoos, Ph.D., and Andrey D. Ukhov, Ph.D.

Vol. 16 No. 27 Do You Look Like Me? How Bias Affects Affirmative Action in Hiring, Ozias Moore, Ph.D., Alex M. Susskind, Ph.D., and Beth Livingston, Ph.D.

Vol. 16 No. 26 The Effect of Rise in Interest Rates on Hotel Capitalization Rates, by John B. Corgel, Ph.D.

Vol. 16 No. 25 High-Tech, High Touch: Highlights from the 2016 Entrepreneurship Roundtable, by Mona Anita K. Olsen, Ph.D.

Vol. 16 No. 24 Differential Evolution: A Tool for Global Optimization, by Andrey D. Ukhov, Ph.D.

Vol. 16 No. 23 Short-term Trading in Long-term Funds: Implications for Financial Managers, by Pamela Moulton, Ph.D.

Vol. 16 No. 22 The Influence of Table Top Technology in Full-service Restaurants, by Alex M. Susskind, Ph.D., and Benjamin Curry, Ph.D.

Vol. 16 No. 21 FRESH: A Food-service Sustainability Rating for Hospitality Sector Events, by Sanaa I. Pirani, Ph.D., Hassan A. Arafat, Ph.D., and Gary M. Thompson, Ph.D.

Vol. 16 No. 20 Instructions for the Early Bird & Night Owl Evaluation Tool (EBNOET) v2015, by Gary M. Thompson, Ph.D.

Vol. 16 No. 19 Experimental Evidence that Retaliation Claims Are Unlike Other Employment Discrimination Claims, by David Sherwyn, J.D., and Zev J. Eigen, J.D.

Vol. 16 No. 18 CIHLER Roundtable: Dealing with Shifting Labor Employment Sands, by David Sherwyn, J.D.

Vol. 16 No. 17 Highlights from the 2016 Sustainable and Social Entrepreneurship Enterprises Roundtable, by Jeanne Varney

Vol. 16 No. 16 Hotel Sustainability Benchmarking Index 2016: Energy, Water, and Carbon, by Eric Ricaurte

Vol. 16 No. 15 Hotel Profit Implications from Rising Wages and Inflation in the U.S., by Jack Corgel, Ph.D.

Vol. 16 No. 14 The Business Case for (and Against) Restaurant Tipping, by Michael Lynn, Ph.D.

Vol. 16 No. 13 The Changing Relationship between Supervisors and Subordinates: How Managing This Relationship Evolves over Time, by Michael Sturman, Ph.D. and Sanghee Park, Ph.D.

Vol. 16 No. 12 Environmental Implications of Hotel Growth in China: Integrating Sustainability with Hotel Development, by Gert Noordzy, Eric Ricaurte, Georgette James, and Meng Wu

Vol. 16 No. 11 The International Hotel Management Agreement: Origins, Evolution, and Status, by Michael Evanoff

Vol. 16 No. 10 Performance Impact of Socially Engaging with Consumers, by Chris Anderson, Ph.D., and Saram Han

Vol. 16 No. 9 Fitting Restaurant Service Style to Brand Image for Greater Customer Satisfaction, by Michael Giebelhausen, Ph.D., Evelyn Chan, and Nancy J. Sirianni, Ph.D.

Vol. 16 No. 8 Revenue Management in Restaurants: Unbundling Pricing for Reservations from the Core Service, by Sheryl Kimes, Ph.D., and Jochen Wirtz, Ph.D.

Vol. 16 No. 7 Instructions for the Food Preparation Scheduling Tool v2015, by Gary Thompson, Ph.D.

Advisory Board

Syed Mansoor Ahmad, Vice President, Global Business Head for Energy Management Services, Wipro EcoEnergy

Marco Benvenuti MMH '05, Cofounder, Chief Analytics and Product Officer, Duetto

Scott Berman '84, Principal, Real Estate Business Advisory Services, Industry Leader, Hospitality & Leisure, PwC

Erik Browning '96, Vice President of Business Consulting, The Rainmaker Group

Bhanu Chopra, Founder and Chief Executive Officer, RateGain

Susan Devine '85, Senior Vice President—Strategic Development, Preferred Hotels & Resorts

Ed Evans '74, MBA '75, Executive Vice President & Chief Human Resources Officer, Four Seasons Hotels and Resorts

Kevin Fliess, Vice President of Product Marketing, CVENT, Inc.

Chuck Floyd, P '15, P '18 Global President of Operations, Hyatt

R.J. Friedlander, Founder and CEO, ReviewPro

Gregg Gilman ILR '85, Partner, Co-Chair, Labor & Employment Practices, Davis & Gilbert LLP

Dario Gonzalez, Vice President—Enterprise Architecture, DerbySoft

Linda Hatfield, Vice President, Knowledge Management, IDEaS—SAS

Bob Highland, Head of Partnership Development, Barclaycard US

Steve Hood, Senior Vice President of Research, STR

Sanjeev Khanna, Vice President and Head of Business Unit, Tata Consultancy Services

Kenny Lee, Vice President of Marketing, Revinat

Josh Lesnick '87, Executive Vice President and Chief Marketing Officer, Wyndham Hotel Group

Faith Marshall, Director, Business Development, NTT DATA

David Mei '94, Vice President, Owner and Franchise Services, InterContinental Hotels Group

David Meltzer MMH '96, Chief Commercial Officer, Sabre Hospitality Solutions

Nabil Ramadhan, Group Chief Real Estate & Asset Management Officer, Jumeirah Group

Umar Riaz, Managing Director—Hospitality, North American

Cornell Hospitality Research Note
Vol. 17, No. 4 (February 2017)

© 2017 Cornell University. This report may not be reproduced or distributed without the express permission of the publisher.

Cornell Hospitality Report is produced for the benefit of the hospitality industry by The Center for Hospitality Research at Cornell University.

Christopher K. Anderson, Director

Carol Zhe, Program Manager

Jay Wrolstad, Editor

Glenn Withiam, Executive Editor

Kate Walsh, Acting Dean, School of Hotel Administration

Center for Hospitality Research
Cornell University
School of Hotel Administration
SC Johnson College of Business
389 Statler Hall
Ithaca, NY 14853

607-254-4504

www.chr.cornell.edu

Lead, Accenture

Carolyn D. Richmond ILR '91, Partner, Hospitality Practice, Fox Rothschild LLP

David Roberts ENG '87, MS ENG '88, Senior Vice President, Consumer Insight and Revenue Strategy, Marriott International, Inc.

Rakesh Sarna, Managing Director and CEO, Indian Hotels Company Ltd.

Berry van Weelden, MMH '08, Director, Reporting and Analysis, priceline.com's hotel group

Adam Weissenberg '85, Global Sector Leader Travel, Hospitality, and Leisure, Deloitte

Rick Werber '83, Senior Vice President, Engineering and Sustainability, Development, Design, and Construction, Host Hotels & Resorts, Inc.

Dexter Wood, Jr. '87, Senior Vice President, Global Head—Business and Investment Analysis, Hilton Worldwide

Jon S. Wright, President and Chief Executive Officer, Access Point Financial