The Center for Hospitality Research
Hospitality Leadership Through Learning

The Impact of Social Media on Lodging Performance

社交媒体对住宿业绩效的影响

(Mandarin Translation)

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by Chris K. Anderson, Ph.D.
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EXECUTIVE SUMMARY

Social media has been touted as having an increasingly important role in many aspects of the hospitality industry, including guest satisfaction and process improvement. However, one of the more intriguing aspects of social media is their potential to move markets by driving consumers' purchasing patterns and influencing lodging performance.

In the absence of a comprehensive attempt to quantify the impact of social media upon lodging performance as measured by bookings, occupancy, and revenue, this report uses the unique position of Cornell's Center for Hospitality Research to combine data from three CHR research partners (ReviewPro, STR, and Travelocity), and two other data providers (comScore and TripAdvisor) in a first attempt at determining ROI for social-media efforts.

The analysis finds the following. First, the percentage of consumers consulting reviews at TripAdvisor prior to booking a hotel room has steadily increased over time, as has the number of reviews they are reading prior to making their hotel choice. Second, transactional data from Travelocity illustrate that if a hotel increases its review scores by 1 point on a 5-point scale (e.g., from 3.3 to 4.3), the hotel can increase its price by 11.2 percent and still maintain the same occupancy or market share. Third, to measure the impact of user reviews on hotel pricing power, consumer demand, and revenue performance the study uses matched-sample data from ReviewPRO and STR. By matching ReviewPRO's Global Review IndexTM with STR's hotel sales and revenue data, a regression analysis finds that a 1-percent increase in a hotel's online reputation score leads up to a 0.89-percent increase in price as measured by the hotel's average daily rate (ADR). Similarly this 1-percent increase in reputation also leads to an occupancy increase of up to 0.54 percent. Finally, this 1-percent reputation improvement leads up to a 1.42-percent increase in revenue per available room (RevPAR).

在服务行业 ，特别是顾客满意度和流程改善方面，社交媒体变得日益重要。而其更有趣的一面则是通过驱动消费和影响住宿业绩继而推动市场整体变革的巨大潜力。

鉴于目前业界尚无完善的研究以定量评估社交媒体对于住宿业关键绩效指标（如预定，入住率，收益）的影响，此文旨在借助康奈尔大学服务业研究中心 的独特优势，整合三家合作伙伴（ReviewPro，STR，Travelocity）和两家数据提供商（comScore和TripAdvisor），首次尝试评估社交媒体的投资回报。

此分析有以下发现。首先，在预定酒店之前通过TripAdvisor查看酒店评价的消费者比例稳步上升。消费者在做决定前阅读评论的数量也相应增多。其次，Travelocity的交易数据显示，如果酒店评价在五分制系统中提升1分（如从3.3分提升到4.3分），则酒店可以提价11.2%而维持入住率或市场份额不变。第三，为评估顾客评论对于酒店定价权、客房需求和收益绩效的影响，本研究使用了ReviewPRO和STR提供的成对样本数据。通过匹配ReviewPRO的全球评论指数（Global Review IndexTM）和STR的酒店销售与收益数据并进行回归分析，我们发现酒店在线声誉增长1%会引起其价格（以日均房价 计量）增长至多0.89%，入住率增长至多0.54%，而单房收益 （RevPar）增长至多1.42%。

译者注：原文Lodging Industry此文译为住宿业，以涵盖酒店、青年旅社、民宿等提供住宿服务的实体。

The Impact of Social Media on Lodging Performance

社交媒体对住宿业 绩效的影响

Hotel industry executives and managers have seen much anecdotal evidence that social media influence guests' booking behavior—and thereby rate and occupancy. However, so far I am aware of no comprehensive analysis of the extent to which social media postings move markets. The cooperation of three Cornell Center for Hospitality Research partners makes such an analysis possible, as presented in this report. Those partners, ReviewPro, STR, and Travelocity, make data available on a non-disclosure basis for aggregate analysis, in this case, an estimate of return on investment for social-media activities. For this report, comScore and TripAdvisor also provided data.

社交媒体对预定行为、房价和入住率的影响，酒店业者已有察觉。但作者至今尚未听闻针对社交媒体如何改变市场进行系统分析的研究。康奈尔服务业研究中心的三位合作伙伴使得该研究得以实现。这些伙伴（包括ReviewPRO，STR，Travelocity）基于保密协议提供了社交媒体活动预期投资回报的总量数据。comScore和TripAdvisor也提供了数据。

In this CHR Report, I analyze the effect of social media upon consumers' purchase decisions and hotels' top-line performance. Using online consumer panel data from comScore, the study illustrates the upstream impact of TripAdvisor on online hotel reservations. In this portion of the study, I show that the percentage of consumers consulting reviews at TripAdvisor prior to booking a hotel room has steadily increased over time, as has the number of reviews they are reading prior to making their hotel choice.

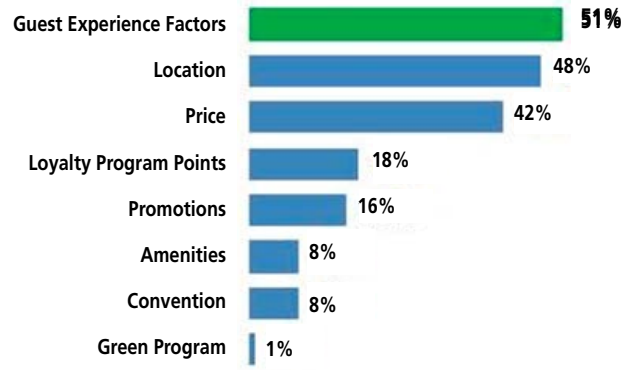
此报告分析了社交媒体对消费者购买决策和酒店营业收入的影响。其中，报告利用comScore的在线消费者固定样本面板数据分析了TripAdvisor对酒店在线预订的影响。研究显示，消费者在预定酒店前通过TripAdvisor查看酒店评价的比例和他们所阅读的评论数量均稳步增加。

Using transactional data from Travelocity, I illustrate the impact of user reviews upon consumers' hotel choice at the time of purchase. Data from purchased and non-purchased hotels illustrate that if a hotel increases its review scores by 1 point on a 5-point scale (e.g., from 3.3 to 4.3), the hotel can increase price by 11.2 percent and still maintain the same occupancy or market share. Last I measure the impact of user reviews on hotel pricing power, consumer demand, and revenue performance using matched-sample data from ReviewPRO and STR. By matching ReviewPRO's Global Review IndexTM with STR's hotel sales and revenue data, I estimate the impact of hotels' online reputation in social-media channels upon hotel performance. I demonstrate that a 1-percent increase in a hotel's online reputation score leads up to a 0.89-percent increase in price as measured by the hotel's average daily rate (ADR). Similarly this 1-percent increase in reputation also leads to demand creation with up to a 0.54-percent increase in occupancy. Finally, this 1-percent reputation improvement leads up to a 1.42-percent increase in revenue per available room (RevPAR).

报告还使用了Travelocity的交易数据来分析顾客评论对消费者选择酒店的影响。从消费者订购和未订购酒店客房的数据中发现，如果酒店评价分数在五分制基础上提升1分（如从3.3分提升到4.3分），则该酒店可提价11.2%而维持相同的入住率或市场份额。最后，报告通过使用ReviewPRO和STR的成对样本分析顾客评论对酒店定价、客房需求和收益表现的影响。通过匹配ReviewPRO的全球评价指数（Global Review IndexTM）和STR的酒店销售与收益数据，报告估测了酒店在线声誉对业绩的影响：在线声誉增长1%会引起其价格（以日均房价计量）增长至多0.89%，入住率增长至多0.54%，而单房收益增长至多1.42%。

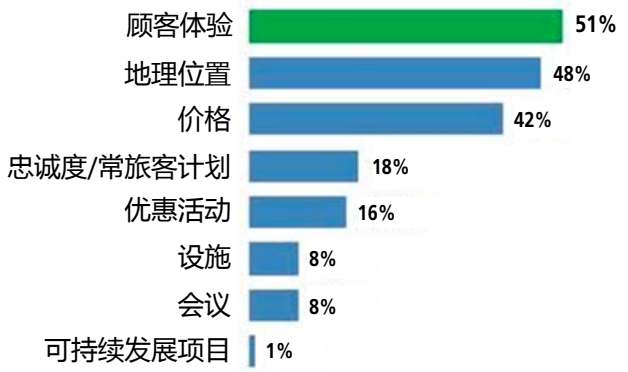
Exhibit 1

Factors in hotel selection



Study by Market Metrix. *Hotel & Motel Management*, January 13, 2010.

图1：影响顾客选择酒店的因素



来源：Market Metrix, Hotel & Motel Management, Jan 13, 2010

This research is the first to perform an assessment of the influence of social media upon hotel performance by illustrating the increasing role of social media in the research phase and how this ultimately leads to hotel pricing power and revenue generation. This is a step beyond earlier efforts that focused more on the use of social media rather than its impact on performance. Similar to the early days of elec- tronic distribution, social media and user-generated content are of increasing importance in the eyes of hospitality companies as consumers become more engaged across numerous platforms during the decision process. One of the aims of this study is to help shed light on why some hotel companies are able to achieve price and occupancy premiums in this new environment.

通过展示社交媒体日益重要的角色以及其如何帮助酒店定价与盈利，本研究首次对社交媒体对酒店业绩影响进行评估。它还将之前聚焦于社交媒体应用而非影响的研究向前推进了一步 。与早些年的电子化分销相似 ，社交媒体与用户原创内容对于服务业企业愈发重要。越来越多的消费者利用各种在线平台帮助决策。本文的目标之一就是探索为何某些酒店能在新媒体大潮中拥有更高的定价和入住率 。

User Generated Content During Consumers' Hotel Search

TripAdvisor is by far the dominant source for online reviews in the hospitality space, with more than 75 million reviews generated by some 32 million users.4 In terms of the hotel choice process, as reported by Market Metrix,5 the tipping point came in 2010, as shown in Exhibit 1. At this point, the guest experience mentioned in customer reviews became the dominant factor in hotel selection, with 51 percent of survey respondents indicating they factored guest experience factors into their hotel selection decision. Given TripAdvisor's dominance in the generation of user reviews I focused on how often consumers consult TripAdvisor prior to booking a room using publicly available data from comScore.

用户生成内容在消费者搜索酒店过程中的角色

在服务业内，TripAdvisor是现阶段占据统治地位的在线评论平台，共有约3200万用户发布了7500万条评论 。根据Market Metrix报道 ，在酒店选择过程方面的引爆点出现在2010年（如图1所示）。彼时，消费者评论中关于顾客体验的部分成为选择酒店的最主要考量因素。约有51%的受访者表示在选择酒店时会考虑关于顾客体验的评论。鉴于TripAdvisor在此领域的主导地位，本研究通过comScore的公开数据聚焦分析消费者在预定酒店前访问TripAdvisor的频率。

EXHIBIT 2

TripAdvisor visitation prior to Brand.com booking

Year	% of Brand.com visiting TripAdvisor	Visits per reservation	Pages per visit	Time per visit (minutes)
2008	28%	3.71	6.89	4.52
2009	26%	3.78	6.19	4.27
2010	36%	4.72	5.51	3.44

图2：在官方网站预定前访问TripAdvisor的相关数据

年份	官方网站浏览者访问TripAdvisor的百分比	每次预定前访问次数	每次访问浏览页面数	每次访问停留时间（分钟）
2008	28%	3.71	6.89	4.52
2009	26%	3.78	6.19	4.27
2010	36%	4.72	5.51	3.44

TripAdvisor Traffic Prior to Brand.com Reservation

Using online consumer panel data from comScore I tracked TripAdvisor.com utilization during consumers' hotel research phase. The comScore panel measures how consumers behave in the digital environment, specifically their internet browsing, buying, and other activity. The firm does this by continuously measuring the online site visits made by approximately 2 million worldwide consumers.

This comScore dataset consists of 1,720 purchase events (hotel reservations) at InterContinental Hotels Group's HolidayInn.com site during nine months: June, July, and August of 2008, 2009, and 2010. This is an example of a brand's website that has come to be generically known as Brand.com. Owing to the nature of the comScore data I have all travel-related website visits (e.g., TripAdvisor.com, Orbitz. com, LasVegas.com) and travel-related searches (i.e., Google, Yahoo, and Bing) for 60 days prior to each of these reserva- tions. Thus I can track the clickstream where consumers went online prior to making a reservation at the suppliers' Brand.com website, and determine what sort of travel-related research they performed. As one would expect; consumers who make reservations online also spend a great deal of time online

I focused on TripAdvisor reviews in this study. For a more generalized look at online behavior, please see my CHR Report, "Search, OTAs, and Online Booking: An Expanded Analysis of the Billboard Effect."6 Exhibit 2 summarizes TripAdvisor behavior of guests who book directly at the Brand.com website.

As shown, an increasing proportion of guests over the three years are visiting TripAdvisor prior to booking with the hotel directly. Not only is the fraction of consumers increasing, but those consumers that do visit are visiting more often (that is, visits per reservation are increas- ing) and they view more pages overall (although pages per visit and time per visit dropped slightly). I believe the drop in time per visit may be due to a more efficient TripAdvisor experience and faster connections (and computers) or simply the increase in consumers' search abilities.

顾客在酒店官方网站预定前访问TripAdvisor的流量

通过comScore的在线消费者固定样本分析，作者跟踪了TripAdvisor.com在顾客预定酒店过程中的使用率。通过连续记录全球约200万网民的网站浏览量，comScore获得固定样本数据以衡量消费者在电子时代中的行为，特别是互联网浏览、购买的活动。

本研究中所使用的comScore数据包含在洲际酒店集团旗下假日酒店官方网站（www.holidayinn.com）的1720次预订。数据横跨2008、2009和2010年的六、七、八月。假日酒店官方网站是众多以品牌作为官方网站地址的例子之一 。鉴于comScore数据的本质，作者获取了其他旅游相关网站在预定发生前60天的访问量数据，包括旅游相关网站（如TripAdvisor.com，Orbitz.com和LasVegas.com）和旅游相关搜索引擎（如Google，Yahoo和Bing）。由此，作者跟踪消费者在官方网站预定前的网络活动的点击流，并观察他们做了何种搜索。正如预期，在网上预定酒店的消费者同样花许多时间来搜集信息。

本次研究聚焦于TripAdvisor上的评论。读者可以参照作者的其他报告 以了解更多网络行为的广义研究。图2概括了直接在直接酒店官网上预定的消费者在TripAdvisor上的行为习惯。

可以看到，过去三年中，越来越多的顾客在预定酒店前访问TripAdvisor。不仅比例增加，且访问频率也增加了（也就是说，每次预定前访问的次数较之前更多）。尽管每次访问时浏览的网页数量和平均停留时间略有下降，但总体访问页数增加了。作者认为，平均停留时间的减少可能是因为顾客更熟悉TripAdvisor的操作，拥有更快的网速，或是更强的搜索能力。

Exhibit 3

Distribution of when guests visit TripAdvisor.com

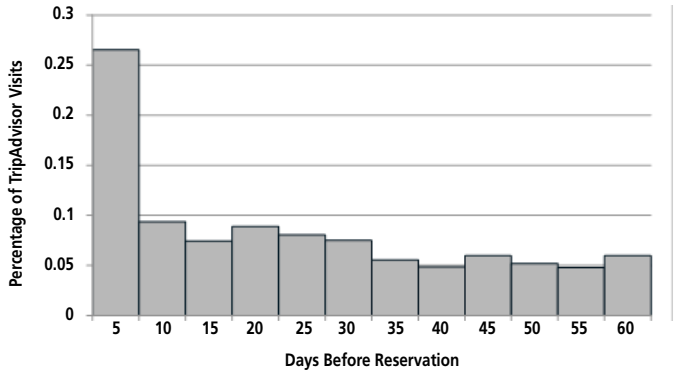


图3：用户访问TripAdvisor时间的分布

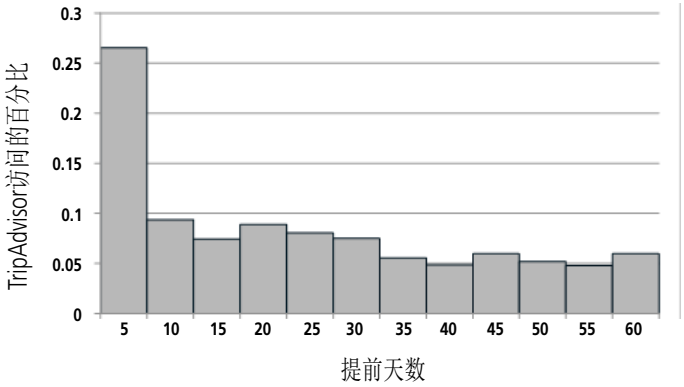


Exhibit 3 summarizes customer activity in terms of when they visit TripAdvisor prior to booking their hotel at the hotel's website. A little more than one-fourth (26.5%) of TripAdvisor visits occur in the last five days prior to the res- ervation, with the remaining three-quarters roughly equally spread out over the other 55 days. This may be an indication of how guests' research intensifies just prior to making the purchase decision. The close proximity (to the purchase) of consumer visitation to TripAdvisor perhaps indicates that user reviews are some of the final and potentially pivotal criteria in the hotel selection process.

图3概括了消费者访问酒店官网预订房间前在TripAdvisor上的活动。约有四分之一（26.5%）的访问量在预定前五天内产生。其他四分之三的访问大致平均分布在提前60天的数个区间内。这或许反映了消费者的搜索如何随着预定时间的变化进一步加强的。消费者在临近预定时访问增加表示在线评论是酒店选择过程中最重要的参考和标准之一。

Point of Purchase Impact

Moving away from Brand.com, let's look at the impact of user reviews at a different point of purchase, in this case, at an online travel agency. I analyzed the impact of user reviews at Travelocity.com upon the purchases made through that site. The data consist of 13,341 reservations made during July 2012 in nine major U.S. cities.7 For each of these 13 thousand-plus reservations, I have information (as provided by a typical OTA display) for the property purchased, as well as all other properties not purchased on the final page the customer looked at prior to selecting the property in question.

购买时点（Point of Purchase）的影响

除官方网站外，作者还研究了用户评论在其他时点上对消费决策的影响。本报告以Travelocity.com作为在线旅游平台的研究对象。数据来源为2012年七月在九个美国城市产生的13341个预定 。每一条预定信息包括被预定的酒店以及消费者在最终预定前访问的最后的一个网页上的其他酒店。

Exhibit 4

Logistic regression results: position, reviewer score, number of reviews, and relative room price

	Parameter Estimates*	Odds Ratio
Position	-0.1218	0.885
User review score	0.133	1.142
Number of reviews	0.0025	1.002
Relative price	-1.192	0.304

*All significant at 0.001 level.

图4：逻辑回归结果：位置、评价分数、评论数量和相对价格

	参数估值*	比值比
位置	-0.1218	0.885
评价分数	0.133	1.142
评论数量	0.0025	1.002
相对价格	-1.192	0.304

*全部在0.001水平显著

Using these data we can gain insight into some of the key attributes that drive hotel selection decisions. Specifically, I estimate the probability a customer would purchase a given hotel as a function of price, user review ratings, and the number of user reviews. Because the outcome variable is binary (1 or 0; 1 for purchase, 0 for non-purchase), regular linear regression can't be used to estimate the impacts of these attributes upon the purchase decision. However, logistic regression can be applied. Using logistic regression I model the probability that a customer would purchase a listed hotel given its attributes (e.g., price, star rating). The logistic regression model given here:

$$\text{Probability of Purchase} \mid X = \frac{e^{\alpha+\beta X}}{1+e^{\alpha+\beta X}}$$

is similar to linear regression where outcomes are modeled as a function of a constant (α) and some attributes (X), which are weighted by parameters (β) modified with the use of Euler's number or e, a mathematical constant equal to about 2.71828. Please contact me if you would like a discussion of the technical issues behind why we need such a model. For this purpose, what is important to realize is that the βs in logistic regression, as in regular regression, indicate the impact of the attribute upon the outcome.

Exhibit 4 summarizes parameter estimates from a logistic regression model of purchase decisions. To account for the hotel's position on the screen, I added a variable, Position, to the independent variables. Position describes the placement of the hotel in the list of hotels (e.g., 1st, 2nd, or 3rd, from the top and so forth). Position takes values of 1-25 with 1 being the top position and 25 at the bottom of the list. Owing to the differences in prices across chain scales I use a relative price measure. The Price variable is a hotel's price divided by the average price of all same star hotels co-listed with the subject hotel. I also control for chain scale by adding an indicator variable for each star level. Of particular interest are the remaining two variables, review scores and review volume and their impacts upon price. Using the regression I estimate how much higher the hotel could price if it had better review scores.

通过这些数据，我们可以洞察驱动酒店选择决定的一些关键因素。作者以价格、酒店评价分数以及用户评论数得出函数来估计消费者预定某一特定酒店的概率。因为结果变量是二进制的（1或者0，0代表不购买，1代表购买），常规的线性回归不能用来估计这些因素对购买决策的影响，而逻辑回归同样则可以适用。作者使用逻辑回归对消费者预定酒店的概率建模，考量包括价格、星级等因素。逻辑回归模型是：

$$\text{Probability of Purchase} \mid X = \frac{e^{\alpha+\beta X}}{1+e^{\alpha+\beta X}}$$

这个模式与线性回归相似，包含一个常数（α）和若干因素（X）。这些因素由参数（β）赋予不同权重。这些参数使用Euler数（也就是数学常数e，约等于2.71828）修正。如果读者希望就此模型的必要性和技术问题展开讨论，请联系作者。值得注意的是，如同一般回归，逻辑回归中的β值表示因素对于输出结果的影响。

图4概括了由购买决策的逻辑回归模型得出的参数估值。考虑到酒店在电脑屏幕上出现的位置可能影响决策，“位置”成为一个变量。“位置”描述了某特定酒店在搜索结果列表中的位置（如从列表顶端起第一位，第二位等）。“位置”的数值从1至25。其中1代表列表顶端，25代表列表底端。由于连锁品牌的酒店间或存在价差，作者引入相对价格，即用某酒店的价格除以出现在同一列表中所有同星级酒店的平均价格。此外，每个酒店星级会得到一个特别的分数作为指示变量以显示连锁酒店档次等级的差异。尤其值得注意的是剩下的两个变量：评论分数和评论数。作者将利用回归分析来估计获得较高评论分数的酒店可以提升价格的幅度。

Given the nature of logistic regression, the parameter estimates (the βs) are not as easily interpreted as in regular regression. Instead of using the parameter estimates, we focus on the odds ratio. The odds ratio represents the change in the odds of an option being chosen (in this case, that is the odds of the hotel being booked) given a one-unit change in the attribute. The odds are the probability of being selected divided by probability of not being selected $\frac{P}{1-P}$

鉴于逻辑回归的性质，参数估值（β）并无法像在常规回归分析中那样易于解释。在此我们更关注比值比。比值比指的是当因素产生一个单位的变动时，被选中选项的概率的变化（在本案例中，指的是某一酒店被预定的概率）。比值的计算方法是被选中的概率除以不被选中的概率。$\frac{P}{1-P}$

The Position value of 0.885 demonstrates the negative effect of being ever lower on the search results. If a hotel is listed at spot 2 versus 1 (or 10 versus 9) its odds of being selected decrease to 0.885 of the odds of being selected when in position 1. That equates to an 11.5-percent decrease in its chances for every notch it drops (all else being equal).

“位置”因素值为0.885，说明在列表低位所产生的负面影响。如果一个酒店在列表中排在第2位（或者第10位），那么它被选中的比值只有排在第1位（或者第9位）而被选中比值的0.885。也就是说，如果其他因素不变，排位每降低一个等级，则其被选中的概率就降低11.5%。

The results of review scores move in the other direction. Using Travelocity's 5-point score for user reviews, the Review Score odds ratio means that increasing one point increases the odds of being selected by 14.2 percent Using the example of a hotel that goes from a review score of, say, 3.3 to one of 4.3, that property has increased its odds of being selected by 1.142 times the odds when its review score was 3.3. A similar result is found for Number of reviews. The 1.002 indicates that for each new review a hotel adds, it increases its odds of being selected increase by 1.002 or 0.2 percent.

“评论分数”这个因素的结果则不同。从Travelocity的五分制用户评论分数可以得出，“评论分数”的比值比指的是用户评分每增加1分，被选中的比值会提高14.2%。例如，若某一酒店的用户评分从3.3增加到4.3，则酒店被选中的比值是3.3分时被选中的1.142倍。同样规律也适用于“评论数量”这个因素。酒店每新增一条用户评论，则被选中的比值是原来状态的1.002倍或增加20%。

It is a little harder to interpret the odds ratio of price in this equation because this variable is actually relative price. Price is perhaps best understood by combining the effects of price and review scores. Say that the average price of all competing hotels (those with the same star rating) that ap- pear on the list page with our hotel was $100 and our hotel's price was $100. If we were to increase our review score from 3.3 to 4.3 we could increase our price about 11.2 percent and maintain the same probability of being selected. The positive effect of the review score change on the odds of being chosen would offset the presumably negative odds caused by a price increase.

在这个方程中解释“价格”这个因素略有困难，因为这个变量实际是相对的。我们或许可以结合“价格”和“用户评分”的影响来理解。假设所有出现在同一搜索结果列表中的竞争对手（与目标酒店星级相同）平均价格为每晚100美元，而目标酒店的价格同为100美元。倘若用户评分从3.3增加到4.3分，目标酒店可以提价11.2%而保持被选中的概率不变。用户评分增加对被选中比值的积极影响会抵消价格增长可能带来的消极作用。

Impact on Hotel Performance

对酒店业绩的影响

Taking the analysis one step further, I analyze the effect of social presence on overall hotel performance, again using matched samples of performance data and online reputation data. Performance data are monthly revenue, demand, and supply data from STR for 2½ years (January 2010 through June 2012) for each subject property. I also compared each hotel with its specified list of competitors, to gain a sense of relative performance in an effort to control for seasonality.

作者进一步使用酒店业绩和在线声誉的成对样本分析了酒店在社交网络上的形象对总体业绩的影响。业绩数据为每月销售收入，客房需求和供给数据（从STR报告中获得每一家目标门店的数据，涵盖2010年1月至2012年6月的两年半时间）。作者还比较了每个目标酒店竞争对手的业绩，以考虑季节性因素对业绩带来的影响。

I have these data for 11 major markets (6 European and 5 North American cities).8 I use ReviewPro's Global Review Index (GRI) for the subject hotels as well as each hotel within its STR listed com-petitive set as a measure of online reputation. ReviewPro aggregates hundreds of millions of social media mentions, in over 35 languages, from Online Travel Agencies (OTAs), review websites and social media platforms. Their GRI is an aggregate online reputation score for an individual hotel, group of hotels, or chain. It is based on scores given by re-viewers on major online review sites and online travel agencies (OTAs). The GRI is calculated by analyzing quantitative scores on these sites, using a proprietary algorithm.[9]

数据涵盖11个主要市场（6个欧洲城市和5个北美城市） 。作者使用ReviewPRO的全球评论指数（GRI）和STR公布的定义的竞争酒店群来衡量每个目标酒店的在线声誉。ReviewPRO将数以百万计、以35种语言发布的社交媒体评论进行汇总，来源包括在线旅游平台、评论网站和社交媒体平台。其GRI是每一酒店门店或连锁品牌的在线声誉综合分。这个分数基于用户在主要评论网站和旅游平台的定量评分，并利用其自有算法得出 。

With this matched data set we look at the impact of GRI on three typical industry metrics: ADR (average daily rate), occupancy, and RevPAR (revenue per available room). In all cases, I am using an index. Thus the measurements are the effect of GRI against a hotel's pricing power as measured by its ADR Index, which is a hotel's average daily rate divided by the average of its competitors' ADRs; the GRI's impact upon demand as measured by the occupancy index, and on overall performance as measured by GRI upon a RevPAR index. Likewise, the GRI Index is calculated as the subject hotel's GRI divided by the average GRI of its competitive set hotels. This GRI Index is the independent variable.

基于成对样本数据，作者从三个方面来衡量GRI（全球评论指数）的影响：日均房价、入住率和单房收益。所有的分析均使用指数。GRI的影响对象包括以目标酒店日均房价指数衡量的定价权（目标酒店的日均房价除以竞争酒店的平均日均房价），以入住率指数衡量的客房需求，和以单房收益指数衡量的总体业绩。同样，以目标酒店GRI分数除以竞争酒店的平均分数得出GRI指数。这里的GRI指数是一个独立变量 。

Similar to many marketing actions (e.g., advertising and pricing) we can anticipate decreasing marginal returns.10 That is, as the GRI score increases the additional impact upon performance decreases. To incorporate decreasing marginal returns, I use a multiplicative model of impact often referred to as a constant elasticity model. Using price and demand as an example I illustrate this approach as follows.

与许多市场营销活动（如广告和价格推广）类似，作者预计边际收益递减 。也就是说，随着GRI分数增加，其对于酒店业绩的边际影响降低。作者使用了影响力积性模型（通常被称为不变弹性模型）。作者利用价格和需求的例子于下文解释此方法。

Price elasticity of demand is defined as the percentage change in demand for a given percentage change in price. So, for example, if price increased by1 percent, and as a result demand fell 2 percent, then elasticity is -2 (-2%/1%). Price elasticity (ε) can be expressed as:

$$\varepsilon = \frac{\%\Delta Q}{\%\Delta P} = \frac{\partial Q}{\partial P}\frac{P}{Q}$$

需求价格弹性指每一单位的价格变动所引起的需求变动。例如，价格提高1%引起需求降低2%，则弹性为-2（-2%除以1%）。价格弹性（ε）可以表示为：

$$\varepsilon = \frac{\%\Delta Q}{\%\Delta P} = \frac{\partial Q}{\partial P}\frac{P}{Q}$$

where ε is the price elasticity, P is the price, and Q is the quantity demanded. If we propose decreasing marginal returns, a demand model might look like Q=aPb.

其中，ε代表价格弹性，P代表价格，Q指需求量。鉴于边际收益递减，需求模型可能为Q=aPb。

If we take the natural logarithm (the inverse of Euler's number) of each side of this equation we get a log-linear demand model of the following form:

$$\ln Q = a + b \bullet \ln P$$

如果对等式两边取自然对数，则需求模型变为：

$$\ln Q = a + b \bullet \ln P$$

where Q and P are defined as before, and a and b are pa- rameters to be estimated. The log-linear demand function implies that the price elasticity of demand is constant:

其中Q和P已于前文定义，而a和b为待估参数。这个函数表明需求的价格弹性是常量。

$$\varepsilon = \frac{d\ln Q}{d\ln P} = b$$

$$\varepsilon = \frac{d\ln Q}{d\ln P} = b$$

Exhibit 5

GRI elasticity

	Pricing Power (ADR)	Demand (Occupancy)	Performance (RevPAR)
All	0.80	0.20	0.96
Luxury	0.44	0.09	0.49
Upper Upscale	0.57	0.30	0.74
Upscale	0.67	0.19	0.83
Upper MidScale	0.74	0.42	1.13
MidScale	0.89	0.54	1.42

图5：GRI弹性

	定价权（日均房价）	需求（入住率）	业绩（单房收益）
全部	0.80	0.20	0.96
奢侈酒店	0.44	0.09	0.49
超高档酒店	0.57	0.30	0.74
高档酒店	0.67	0.19	0.83
中高档酒店	0.74	0.42	1.13
中档酒店	0.89	0.54	1.42

Using data from over 50,000 monthly observations from the eleven global cities, we can look at the impact of GRI upon performance in this log linear framework where I model the impact of ln(GRI Index) upon ln(ADR Index), ln(Occupancy Index), and ln(RevPAR Index), using three log linear models.

作者利用来自•11个城市超过五万条数据分析全球评论指数对于酒店业绩的影响。在上述模式下，对GRI的自然对数对于三个指数（日均房价、入住率和单房收益）的自然对数的影响进行建模分析。

Exhibit 5 summarizes the elasticities for GRI upon these three performance metrics. The table indicates a stronger impact of GRI upon pricing power (ADR) than on demand (Occupancy). This indicates firms are pricing consistent with their value proposition. Better re- views lead to higher prices, while lower reviews force prices lower for hotels to achieve similar occupancies under both settings. As the impacts of GRI upon demand and pricing power are both positive, the impact upon performance or RevPAR is even stronger.

图5概括了GRI对三项业绩指标的弹性。显然，GRI对于定价权（日均房价）的影响强于对客房需求（入住率）的影响。这表明，酒店的定价与其价值定位相符。更好的用户评价带来更高的价格，而较差的评价则迫使酒店降低价格以维持入住率。GRI对于客房需求和定价权有积极的影响，而其对单房收益的影响则更为强烈。

Exhibit 5 looks at all chain scales together, with the subsequent rows looking at online reputation impact by chain scale. The table entries represent the percentage impact upon pricing, demand, and performance given a 1-percent change in online reputation as measured by GRI. Looking at the first row, a 1-percent increase in a hotel's GRI score, say from 80 to 80.8 aligns with a 0.96-percent increase in RevPAR.

图5的结果在涵盖不同等级 连锁酒店的同时，也显示了在线声誉对各等级酒店的影响。表格中的条目代表在线声誉（以GRI衡量）每1%的变化对客房价格、需求和酒店业绩的影响。如第一行所示，酒店GRI分数提高1%（例如，从80增加到80.8），单房收益则增加0.96%。

It is interesting to compare the RevPAR elasticity across chain scales, as the effect of online reputation is stronger for lower-end chain scales. Thus, the gain from online reputation improvement is much more profound for a midscale property (1.42%) than for a luxury hotel (.49%). Given the vast diversity of service levels in midscale hotels, would-be guests may experience more uncertainty in the level of service in lower chain scales. Thus, it makes sense that reviews in the form of the GRI have a much stronger effect on lower chain scales. The im- provement in online reputation represented by a strong GRI reduces the level of service quality uncertainty in the eyes of consumers. As a result those highly rated firms have in-creased pricing power compared to those with lower ratings.

在不同档次连锁酒店间比较单房收益的弹性同样有意义。在线声誉的影响对于较低端连锁酒店更大。因此，中级酒店改善在线声誉所带来的影响（达到1.42%）相比于奢侈酒店（0.49%）更为深远。鉴于中级酒店服务水平层次不齐，潜在客户在选择较低端酒店时可能承受更多不确定性。所以，以GRI形式表现的用户评论对于较低等级的连锁酒店有更显著的影响。改善在线声誉（获得更高GRI）能降低服务质量在消费者眼中的不确定性。而获得较高评价的酒店相较于低评价酒店则增加了定价权。

Summary

总结

Hotel operators have suspected that the effect of social media and user generated content on hotel performance has been strengthening. This paper provides a numerical confirmation and estimate of those effects. Reviews and review sites continue to be in the forefront when consumers are planning a hotel room purchase. Our comScore sample indicates that the percentage of consumers consulting online review sites prior to their purchase is increasing with time, and the number of visits per person also has grown noticeably.

酒店运营商对社交媒体和用户生成内容对酒店业绩影响增强尚有疑虑。而本文则通过数理分析确认并估测了此影响。用户评论与评论型网站在消费者选择酒店时一直具有重要地位。comScore的样本表明，在预定酒店前访问在线评论网站的消费者比例持续增加。消费者所访问页面的数量也有明显增长。

With regard to online reviews, TripAdvisor continues to play an increasing role in the eyes of consumers, and with its marketing options this site has the potential to affect hotel performance as it acts as a portal to brand sites. More generally, OTA reviews, their quality and numbers, lead to increased conversion rates and improved pricing power at the OTA, as evidenced by our investigation of transactions at Travelocity. Using logistic regression to model purchase incidence I estimate that a 1-point increase in user review score (on an OTA's 5-point scale) would allow a property to increase price by 11.2 percent and maintain the same purchase probability or market share. Last, the cumulative impact of user reviews across all channels shows a positive relationship with overall hotel performance.

在线评论方面，TripAdvisor继续在消费者中扮演关键角色。且基于其市场推广的功能，TripAdvisor可能影响酒店业绩。大体上来说，在线旅游平台上评论的质量和数量会增加转化率和提升定价权。这已由本文对Travelocity数据所做的分析和调查证实。作者使用逻辑回归模型，估测出用户评价在五分制系统中每提升一分，则酒店可以提价11.2%而维持入住率或市场份额不变。最后，所有渠道用户评论的累积影响与酒店总体业绩正相关。

We see that improved online reputation, as measured by ReviewPRO's GRI, results in increased pricing power and occupancy for a hotel. The model estimates that a 1-percent increase in GRI leads to as much as a 0.89-percent increase in ADR, and a 0.54-percent increase in occupancy. Combining these effects, a 1-percent increase in GRI results in up to a 1.42-percent increase in RevPAR.

酒店若提升以ReviewPRO的GRI来测算的在线声誉，其定价权和入住率会随之改善。GRI每1%的引起日均房价增长至多0.89%，入住率增长至多0.54%，而单房收益增长至多1.42%。

As a note of caution this study has focused on the impact of user generated content and hotel performance. Needless to say, many factors contribute to hotel performance that are not measured here. That said, these results are generalizable to the extent that the factors that are not measured are random across the firms in our samples. As I attempted to collect a sample across a wide spectrum of locations, it is reasonable to say that these results do apply to hotels generally. ■.

在此需要提醒读者的是，本次研究主要聚焦于用户生产内容对酒店业绩的影响。显然，许多左右酒店业绩的因素未在此提及。尽管如此，通过本研究结果可推断那些未被测算的因素在样本中是随机的。由于作者搜集了横跨不同区域的样本，可认为本研究结论对于酒店普遍适用。 ■

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