

## Chapter 89

# Using Word Trees, Word Networks, and Tag Clouds to Provide Meaningful Insights: A Case Study of Electronic Word of Mouth for Hotel Service Delivery

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### **ABSTRACT**

*The combined use of data mining techniques and qualitative consumer reports can provide meaningful insights into service performance and relevant decision making. In several case studies, the authors combine qualitative comments from an online hotel feedback website about popular travel destinations, as reported by business, pleasure, and mixed-use travelers. After extracting 1,893 useable customer comments, using a web spider application, the study software produced summaries of qualitative comments in the form of tag clouds, word networks, and word tree images. This technologically enabled analysis of consumer-reported information provides consumer researchers with more objective ratings of qualitative consumer assessments of their experience across various units of analysis, with several applications for corporate and operational management. Furthermore, several implications inform consumer researchers and corporate consumer research departments about effective ways to investigate and serve industry. This study also has several limitations that suggest routes for further research.*

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## **1. INTRODUCTION**

Consumers frequently use online reviews of service experiences to support their decision making (Baccianella, Esuli, & Sebastiani, 2009). Among users of the online referral system TripAdvisor, 97.7% acknowledge that they are influenced by other travelers' reviews, and 77.9% of this group uses the reviews to help them select lodging properties (Gretzel & Yoo, 2008). Beyond consumer uses, managers should employ such comments to identify service strengths and weaknesses. Thus, online comments have considerable utility for researchers and practitioners, in terms of their customer relationship management potential (Cho, Im, & Hiltz, 2003). Sigala (2011) argues web 2.0 enables firms and users to generate customer value and build customer relations through social networking, co-learning, co-production and collaboration.

This exploratory case study seeks to demonstrate how data mining methods might be used in concert with qualitative software to compile useable summary information, in support of efforts by operations management, corporate research, or corporate management. Furthermore, service providers could gain greater insights into their customers from their online feedback. Customers' interactions and dialogues in online contexts generate ideas for new services (Sigala, 2012). The information gained can facilitate service delivery assessment, service recovery, or future service designs. A secondary objective of the study is simply to demonstrate that various combinations of these reports offer a compelling and unique research design.

Therefore, this article begins with a summary of gestalt theory as its theoretical underpinning. After a review of selected literature pertaining to online consumer reviews related to electronic word of mouth (eWOM), electronic consumer decision making, and electronic detection of service success or failure, this article describes the methods adopted to address the study objectives. The data

analysis and its results reflect the sample demographics of TripAdvisor users and feature both traditional, summarized, reported scores and the respondents' written comments. The results can be depicted in data visualizations, such as word trees, root diagrams, and tag clouds of the qualitative comments, which in turn reveal condensed methods for summarizing large amounts of qualitative comments. Finally, this article concludes with a discussion of the study results, implications from those results, along with some study limitations and specific research directions.

## **2. LITERATURE REVIEW**

### **2.1. Gestalt Theory**

Many studies related to customer experience outcomes, whether satisfaction or dissatisfaction, support the use of gestalt theory as a basis for deriving valuable information from consumer comments (e.g., Severt, 2002; Wirtz & Bateson, 1999). Gestalt theory (Wertheimer, 1900) asserts that the whole is greater than the sum of the parts, and a unified view applies directly to consumers and their assessments. Therefore, consumers about to make a decision likely place more value on summary or holistic qualitative comments from others, then use this information to gather input and make experience-related decisions.

Considering the importance of understanding the salient dimensions to be evaluated by the consumer, we believe the analysis of online consumer comments also may benefit firms' self-assessments, business modeling, service innovation, and service research designs. Wirtz and Bateson (1999) pinpoint negative and positive halo effects associated with consumer experiences, for example, and Nisbett and Wilson (1977) consider these halo effects as powerful leverage, because they stimulate and influence consumers' preferences and purchasing plans.

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