

Designing Ranking Systems for Consumer Reviews: The Economic Impact of Customer Sentiment in Electronic Markets

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Abstract. With the rapid growth of the Internet, users' ability to publish content has created active electronic communities that provide a wealth of product information in the form of product reviews. However, the high volume of reviews that are typically published for a single product also have the potential to make it harder for individuals to evaluate the true underlying quality of the product based on the reviews. In such situations, the numeric data based on the average star rating of a product or on the number of reviews may not convey a lot of information on its own to a prospective buyer, and in fact buyers may naturally gravitate to reading reviews in order to come to a decision regarding the product. We conjecture that the textual content of each review may be playing an important role in influencing consumer purchase decisions and thereby affecting actual sales of the product. Hence, in this paper we investigate the veracity of this theory and propose an economics-based algorithm for ranking product reviews, according to their impact on sales and according to the extent to which other consumers perceive them as informative. We also examine the extent to which the presence of subjective (sentimental) or objective sentences in a review affects the informativeness of a review, as perceived by other users in the electronic market. Our methods can be used to predict the usefulness of a review immediately after posting thereby enhancing the speed and efficacy of decision-making. Our results can have several implications for market design of these online opinion forums by designing review-ranking systems that are robust to review manipulation and can be more quickly deployed than those that are used currently in Web-based systems.

Keywords: Consumer Reviews, Electronic Market Design, Subjectivity Analysis, Ranking System, Economining.