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Computerized Scoring System: A Stethoscope to Understand Consumer's Emotion through His or Her Feedback

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Abstract : Most companies pay careful attention to consumer feedback collection, so it is popular to find the ‘feedback’ button of all kinds of mobile apps. Yet it is much more changeling to analyze these feedback texts and to catch the true feelings of a consumer regarding either a problem or a complimentary of consumers who hands out the feedback. Especially to the Chinese content, it is possible that; in one context the Chinese feedback expresses positive feedback, but in the other context, the same Chinese feedback may be a negative one. For example, in Chinese, the feedback 'operating with loudness' works well with both refrigerator and stereo system. Apparently, this feedback towards a refrigerator shows negative feedback; however, the same feedback is positive towards a stereo system. By introducing Bradley, M. and Lang, P.'s Affective Norms for English Text (ANET) theory and Bucci W.’s Referential Activity (RA) theory, we, usability researchers at Pingan, are able to decipher the feedback and to find the hidden feelings behind the content. We subtract 2 disciplines ‘valence’ and ‘dominance’ out of 3 of ANET and 2 disciplines ‘concreteness’ and ‘specificity’ out of 4 of RA to organize our own rating system with a scale of 1 to 5 points. This rating system enables us to judge the feelings/emotion behind each feedback, and it works well with both single word/phrase and a whole paragraph. The result of the rating reflects the strength of the feeling/emotion of the consumer when he/she is typing the feedback. In our daily work, we first require a consumer to answer the net promoter score (NPS) before writing the feedback, so we can determine the feedback is positive or negative. Secondly, we code the feedback content according to company problematic list, which contains 200 problematic items. In this way, we are able to collect the data that how many feedbacks left by the consumer belong to one typical problem. Thirdly, we rate each feedback based on the rating system mentioned above to illustrate the strength of the feeling/emotion when our consumer writes the feedback. In this way, we actually obtain two kinds of data 1) the portion, which means how many feedbacks are ascribed into one problematic item and 2) the severity, how strong the negative feeling/emotion is when the consumer is writing this feedback. By crossing these two, and introducing the portion into X-axis and severity into Y-axis, we are able to find which typical problem gets the high score in both portion and severity. The higher the score of a problem has, the more urgent a problem is supposed to be solved as it means more people write stronger negative feelings in feedbacks regarding this problem. Moreover, by introducing hidden Markov model to program our rating system, we are able to computerize the scoring system and are able to process thousands of feedback in a short period of time, which is efficient and accurate enough for the industrial purpose.

Keywords : computerized scoring system, feeling/emotion of consumer feedback, referential activity, text mining
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