**A Letter**

Dear the Marketing Director of Sunshine Company:

It’s our honor to be hired as consultants to identify key patterns, relationships, measures, and parameters in past customer-supplied ratings and reviews associated with other competing products. We are writing this letter to report our latest breakthroughs and findings.

We use natural language processing to analyze the data of three product reviews and derive the semantic and emotional keywords along with the sentiment of the reviews.

With the support of our NLP instance, our keywords subsystem is able to collect keywords that match certain requirements. For example, it could show all the keywords that are most frequently used by the customers who like/dislike the product, which can be an evidence indicating that the reputation of the product is going to rise/drop, your team may as a result update the marketing strategy to increase sales or fix the reputation of the product.

As an instance, the following figure are ‘word clouds’ generated by the keywords subsystem. The keywords are collected from the most negative reviews, serving as the indicators of a coming reputation drop. Your team can monitor the most frequently shown keywords and take measure in advance of the reputation loss.

**Figure 1: hair\_ dryer Figure 2: microwave Figure 3: pacifier**

In additional to that, our keywords subsystem can also be configured to output only nouns and verbs, showing the most popular/hated points of the product. This indicates potentially important design features that would enhance product desirability. Your team are suggested to advertise the advantages or improve the weakness based on the keywords provided.

For example, the word ‘warranty’ in microwave’s word cloud clearly indicates that warranty service is of vital importance and many customers and not satisfied with the current warranty policy. Your team may consider improving and advertising your warranty policy to attract customers to buying your product instead of your competitors’.

We believe that while evaluation of the reviews is of vital importance, it is also crucial to tell if a customer’s review is ‘reliable’, which means whether the customer and the review is trustworthy and objective or a intentionally written lie trying to deceive customers. Our weighting system evaluate every review entry to find out if the review entry, or the customer himself, is ‘reliable’. We believe that our weighted reputation score can accurately evaluate the customer feedback of the product, thus indicate a potentially successful or failing product.

With the help of our weighting system, our visualizing subsystem can visualize the ‘real-time’ and ‘accumulated’ reputation of a selected model into time-based patterns. The ‘real-time’ pattern is the weighted average of a certain period, for example, the following figure on the top is the average reputation score of every 30 days. The ‘accumulated’ pattern is the weighted average of all the scores before the time stamp, as shown the following figure at the bottom.

**Figure 4: B003CK3LDI-Realtime**

**Figure 5: B003CK3LDI-Accumulated**

It is easy to identify the inflection points from the ‘accumulated’ pattern and with the help of the ‘real-time’ pattern we can conclude that the sharp drop of the reputation caused by an extremely negative review DID make the customers tend to write their reviews less positively than before. And your team can work out a plan against any upcoming negative reviews to minimize the potential loss.

That’s all for our model and our findings, we wish our work could help you succeed in your coming online marketplace product offerings.

Yours sincerely

Team 2013868