

# Product Quality Analysis based on online Reviews

Awhale Kaveri Tukaram<sup>1</sup> Iyer Pooja Bhaskar<sup>2</sup> Ghodekar Kalpesh Santaram<sup>3</sup>  
Gopal B. Deshmukh<sup>4</sup>

<sup>1,2,3,4</sup>Department of Computer Engineering

<sup>1,2,3,4</sup>MES, College of Engineering Pune, India

**Abstract**— Customers satisfaction is the most important criteria before buying any product. Technology today has grown to such an extent that every smallest possible query is found on internet. An individual can express his reviews towards a product through Internet. This allows others to have a brief idea about the product before buying one for them. In this paper, we take into account all the challenges and limitations encountered while reading the online reviews and time being consumed in understanding quality of the product from the reviews. We include several methods and algorithms that help the consumer to understand the Quality of the product in better way.

**Key words:** Aspect, Summarization, Categorization, Reviews, comments

## I. INTRODUCTION

As we know, we all are fond of shopping. In early days we have to remove time from your busy schedule for shopping. We all know technology is increasing day by day. Due to advancement in technology shopping has become easy now as has step to our house itself in the form of online shopping. We simply sit at home and shop what we want and what we need.

In early days before buying any product we ask other people their opinion about the product, its quality and many more. Whereas now it become easy as the information is already available on the internet. The users are being given the opportunity to write their reviews about the product through internet. This has proved to be useful to other consumers as well.

Apart from the star rating system, reading reviews and getting a brief idea about the product is the preferred choice. One of the main drawbacks of this review system is that, 'n' number of users of a single product writes their views. So before buying any product it has become a habit for the users to refer the reviews at once and proceed with their selection. But reading the number of reviews and then coming to a conclusion is quite difficult. We come up with a solution by making a categorization method.

## II. RELATED WORKS

Multi-Document Summarization of Evaluative Text – When an individual uploads review about any product it becomes very easy for him/her to rate the quality or specify any defect about a particular aspect. A product quality is decided after analyzing the reviews obtained considering number of aspects of the product. Also it becomes difficult for the producer to identify the aspect of the product where improvement is required. This leads to a situation where summarization of the data is the must. This paper mainly focuses on large amount of data that is been collected by numerous websites.

In recent times many survey were conducted. A survey conducted by JAKPAT, to find how many people refer

online reviews before buying any product. The conclusion of the inspection turned out to be that, out of the total number of consumers, 82.41% consumers believe in referring online reviews before buying products, whether it be for online or offline shopping. 95.41% of people often compare the product reviews with reviews on other e-commerce websites. Also 51.56% people believe in uploading positive reviews once they buy a product, while the rest believe in uploading negative reviews about a product.

Product Aspect Ranking and Its Applications: Addresses an issue of enhancing the review system for the benefit of companies, which use feedbacks of customer to improve the quality of product in particular aspect. Consumer reviews are important for both firms and the exploiter as it has valuable knowledge. Huge number of reviews of product is available based on different aspect of the commodity. The customer always specifies the aspect while writing a review. But every person analyzing the reviews doesn't take in account every review in the system. Its time consuming and confusing to go through each and every comment and to decide which one to consider. There are 3 basic components: 1) every aspect of the product is identified and sorted, 2) classifies on the basis of user's expressions, 3) Lastly, ranking is done. Using these algorithms are beneficial as it reduces the difficulty. Probabilistic aspect ranking algorithm recognizes important aspects, deferring the main aspect quality is improvised.

## III. FRAMEWORK

To get a convinced review about the product without reading the number of comments is no easy. Here we are trying to make it more convenient for the consumer to understand the quality of the product. All that the consumer has to do is open an e-commerce website, select the product of his own desire, then simply pass the comments on the website as input to the system. The system will pre-process the given comments according to the product. The product quality will be analyzed based on the aspects and the keywords that are obtained from the reviews. The aspects will be analyzed based on the reviews obtained and a short conclusion will be made. Here we will be using two main algorithms namely – Probabilistic Aspect Ranking Algorithm and Porter stemming Algorithm.

In Probabilistic Aspect Ranking Algorithm the aspects of the product are selected along with its related reviews from the comment. For example, for the comment say the "the touch is as smooth as butter", here the aspect touch is related to smooth as butter, so when we apply the algorithm to this comment we get the relation as touch – smooth. So on we can the relation for each and every aspect mentioned in the comment.

Porter Stemming Algorithm plays the most important role here. The consumer has complete freedom to express his/her reviews about each aspect of the product. We also know that when an individual is express his views, the

words are not in their original form for example, the word connect is often expressed as connections, connected etc. We can come to a short conclusion saying that reviews are expressed by adding prefixes, suffixes, using superlative degrees, sometimes plural form of the word is used etc. So it becomes necessary for the system to eliminate the extras and form original word. The main reason in doing so is that, it is not possible to store meaning of each and every form of the word in the database.

#### IV. FUTURE WORK

We will further be expanding the idea as our project. Initially we are planning to implement the idea for few electronic products. The comments passed to the system as input will be pre-processed and undergo through the probabilistic algorithm so as to obtain the relation between the aspects and its reviews. Then further undergo through the porter stemming algorithm so as to obtain the original word and its meaning as mentioned above. Once when the result is obtained it is stored in the database too for the further use. Next time when the comments of same product are passed to the system, the system can directly display the output which helps in reducing the processing time. It can further prove to be helpful to the organizations. We know that whenever improvement of a product is considered the organization has to concentrate on all the aspect of the product as they are only aware of the overall quality of the product. This review system can also prove to be helpful to the organizations by notifying the organizations about quality of each aspect. Hence the rate of improvement in the product can change drastically.

#### ACKNOWLEDGMENT

It gives us great pleasure in presenting a paper on 'PRODUCT QUALITY ANALYSIS BASED ON ONLINE RE-VIEWS.'. We are really grateful to them for their kind support. Their valuable suggestions were very helpful. I am also grateful to Prof. N. F. Shaikh, Head of Computer Engineering Department, Modern Education Society College of Engineering, Pune for his indispensable support, suggestions. In the end our special thanks to Other Professors for providing various resources.

#### REFERENCES

- [1] An Efficient product aspect ranking and its application: A review Shahuraj Patil, Joti Raghawan International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Impact Factor (2012): 3.358
- [2] Multi-Document Summarization of Evaluative Text Giuseppe Carenini, Raymond Ng, and Adam Pauls University of British Columbia Vancouver, Canada
- [3] Product Aspect Ranking and its Applications Zheng-Jun Zha, Jianxing Yu, Jinhui Tang, Meng Wang, Tat-Seng Chua IEEE TRANSACTIONS ON KNOWLEDGE AND DATA ENGINEERING, VOL. 26, NO. 5, MAY 2014
- [4] Product Aspect Ranking Techniques: A Survey Rutuja Tikait, Ranjana Badre, Mayura Kinikar International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007 Certified Organization) Vol. 2, Issue 11, November 2014.