

# Consumer reviews mining:

## Knowledge discovery in consumer reviews posted online

### Who can benefit from analyzing consumer reviews?

Any firm, whose products or services are reviewed on the Internet. Most often we do consumer reviews mining for:

- Manufacturers of electronics and appliances
- Hotels
- Restaurants
- Internet stores

### Where do we take consumer reviews from?

By consumer reviews we mean textual reviews together with numeric ratings posted by consumers of goods and services on special websites, such as Epinions.com, Cnet.com, Ciao.com, etc. It was proved by marketing scholars that potential customers consult with such websites before making the purchase and that there is a strong link between product ratings and sales<sup>1,2,3</sup>.

### Why is it so useful to analyze consumer reviews?

The analysis of freely expressed customer opinions is an excellent alternative to conventional survey techniques used in preference elicitation studies.

- Consumer reviews are freely available on the Internet, so no expensive surveys are needed to learn the opinion of your customers
- Consumer reviews contain lots of information and allow us to work with large samples
- High level of authenticity can be expected, because reviewers have not been requested to communicate their opinions but are doing so voluntarily
- With the help of data analysis professionals you can identify key advantages, disadvantages of a product, as well as product attributes which are important for consumers and those which do not influence product evaluations
- Consumer reviews mining can both substitute and complement satisfaction surveys, conjoint analysis and scanner data studies

### What are some of the problems with analyzing the reviews?

- The number of reviews (and often the number of products marketers interested in) is enormous, so advanced automation techniques are necessary
- The reviews are in text form and are hard to structure and draw conclusions from
- In order to go beyond simple statistics based on numeric ratings and find which product attributes are important and which are unimportant for consumers an analyst should be an advanced user of statistical and data mining techniques

We have solved all these problems based on cutting edge marketing science results, including our own ones. Now we can offer our clients "Consumer reviews mining" project.

### What is the structure of "Consumer reviews mining" project?

- You send us the names of 1 or more products (e.g. *Samsung Galaxy Ace La Fleur S5830l*), for which you want to learn rating dynamics, advantages, disadvantages, key attributes which increase customer satisfaction and attributes which are not important.
- Using special software we gather all the numeric ratings and text reviews from one of the key websites that aggregate consumer reviews on products/services in your market
- We do data preprocessing and formatting
- We quantify textual information using text mining techniques (frequency analysis and principal components analysis)

<sup>1</sup> Zhu, F., & Zhang, X. (2010). Impact of online consumer reviews on sales: The moderating role of product and consumer characteristics. *Journal of Marketing*, 74(2), 133–148.

<sup>2</sup> Ghose, A., & Ipeirotsis, P. G. (2007). Designing novel review ranking systems: Predicting the usefulness and impact of reviews. *Proceedings of the 9th International Conference on Electronic Commerce*, Minneapolis (pp. 303–310).

<sup>3</sup> Sher, P. J., & Lee, S. -H. (2009). Consumer skepticism and online reviews: An elaboration likelihood model perspective. *Social Behavior and Personality*, 37(1), 137–144.

- We analyze the dynamics of ratings on a weekly and monthly basis. After that you will be able to look for a link between product ratings, sales and prices
- We analyze the key pros and cons mentioned for your product/service (i.e. positively and negatively evaluated attributes) and provide you with extracted functional attributes and associated relative frequencies
- Using advanced regression techniques we estimate the effect of mentioning each attribute on overall consumer satisfaction (i.e. we conduct key drivers analysis). In such a way we determine the importance of each attribute

#### **Additional analyses when several products are considered:**

- Besides providing you with several separate reports, we will conduct key drivers analysis for the pooled sample of these products so that you will learn the hierarchy of attribute importance for the group of competing products. If there are many products representing different brands (over 10 products per brand), we can estimate the influence of brand effect on product evaluations
- Model/brand image: we transfer consumer messages into perceptual maps based on co-occurrences of products (e.g. car models) and terms (e.g., adjectives) using correspondence analysis

#### **Important features of our services**

- Since we use latent classes techniques, we are able to detect several segments of consumer preferences
- We will send you not only the detailed report, but also the raw dataset in almost any format (including Microsoft Excel, tab-delimited text file or SPSS dataset)
- We will do any additional analysis upon your request free of charge if it can be done using the collected data
- We guarantee free lifelong e-mail support in case you need any help with the interpretation of the results

#### **What is the duration of the project?**

- Number of days=4 +(number of reviews/100)  
E.g. if you need the analysis of 200 reviews product it will take us  $4+2*1=6$  workdays to do the analysis, which is much faster than any field market research
- We can reduce the time with the proportional increase in price

#### **Who will conduct the analysis for you?**

We are an international team of data analysts and management consultants with postgraduate degrees in Economics, Statistics and Business Administration. Our papers are published in leading peer-reviews journals in the fields of marketing science and expert systems.

We trust our clients and allow them to pay 50% after we send them the slightly cropped report in pdf format. After the payment is processed, we send our client the fully editable version in Microsoft Word format. After that the client pays another 50% of the fee.

**Due to possible differences in time zones, we suggest that you contact us at [info@StatAdvice.com](mailto:info@StatAdvice.com). We always reply within 12 hours 7 days a week**