

Performance of Korean Products Based on Online Reviews*

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Abstract. Recently Korean products have been getting a lot of attention in the area of electronic consumables. The abundance and ever increasing use of online reviews gives us data to use. Using online reviews we found out the trend of average yearly product category ratings of brands and also map out product features search results on google map. In this research we focus on electronic products. The implementation of this project was down in java with open source tools.

Keywords: We would like to encourage you to list your keywords in this section.

1 Introduction

The rise of Samsung as the world largest producer of smart phones correlates with how much its products are preferred by the international market. Also Samsung combined with LG have large percentage of flat panel display televisions. This has brought a lot of spot light to the South Korean company.

In this paper we will use online review to find the review of Samsung and LG review trend. We also use language processing to extract the sentiment from these review at the sentence level as the reviewers already stated the overall satisfaction level. In this study we selected Amazon as the data source for online review as it one of the largest source of line product review. In this study we search electronic categories of Amazon.com for South Korean manufacturers which includes LG and Samsung. The main purpose of this project is to use java to build our own crawler to get data from the website, MySQL to house the database and visualize the data in a web application.

2 System Architecture

Fig.1 displays the system architecture of the whole experiment. All the processes was written in java.

* This paper summarizes a part of a master's thesis

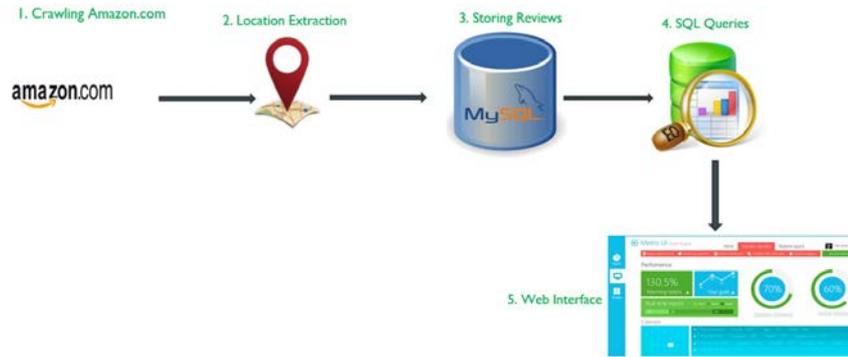


Fig. 1. System Architecture overview

1.3 Crawling

We created a custom crawler to get the data from amazon.com. We started by identifying the data we needed and the corresponding HTML element they are found in. We parsed the data in a java method using the Jsoup API to get the data from the HTML element.

1.2 Location

When the crawler finds data in the location field on the website, it triggers a method to find the longitude and latitude from a table in our database containing all cities in the USA. Reviewers are not under obligation to use a standard name form of their location. As a result we created a process to standardize the data by removing abbreviations and also to capture some acronyms for cities and states in the USA.

3 Data

The collected reviews are contained in the table below shows the data in the database.

Table 1. All Data Collected.

Product	Total Reviews	Samsung	LG
Television	35571	28778	6793
Monitor	1179	1010	161

Notebook	6013	6013	0
Washers	275	110	568
Refrigerator	189	133	56

* LG has no review on notebook

4 Experiment Result

The SQL queries and visualization helped us to see the trends of the online review. We will discuss two categories each for Samsung and LG to make this paper brief.

The first review for Samsung was in 2003 which was on Television and LG first review was in 2006 for television. The number of reviews has increased dramatically from 2006. Even though this year has not ended the total reviews is more than that of last year.

The average star rating of products are not stable. Both Samsung and LG television experienced a year to year fall from 2009 to 2012 but Samsung review started from 2008. Samsung rating fell from 4.6 in 2008 to 4.02 in 2012. Samsung has since seen improvement from 4.02 in 4.2 in 2014. LG television average review rating fell from 4.61 in 2009 to 4.2 in 2012 but since bounced to 4.33 in 2014. In the case of Monitors Samsung and LG rating are on the rise.

In the fridge section Samsung products had average star rating of 2.75, 3, 1.69, 1.79, 2.08 in 2010,2011,2012,2013 and 2014 respectively. LG products recorded 3.29, 2.76, 1.56, and 2.17 in 2011, 2012, 2013 and 2014 respectively. The results showed that both Samsung and LG had low review in 2013 and are beginning to rise.

Data aggregated from the washers section on Amazon.com showed Samsung products had average star rating of 5, 2.38, 2.13, 1.44, and 1.69 in 2011, 2012, 2013 and 2014 respectively. LG products recorded 4.25, 3.27, 3.15, 3.9 and 2.44 in 2011, 2012, 2013 and 2014 respectively. The results showed that both Samsung and LG average rating has fallen sharply from their peak.



Fig. 2. Yearly Average review points LG TV



Fig. 3. Yearly Average review points Samsung TV

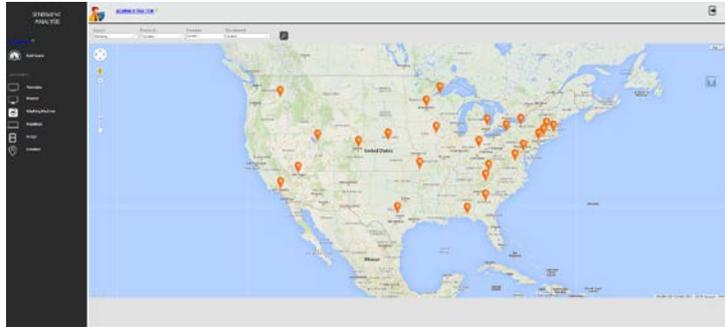


Fig. 4. Location based Reviews showing average review points of states

4 Conclusion

In this paper we built a system to crawl reviews and aggregate them to show the trend of Korean manufactures performance using online reviews collected from amazon.com. Users of the system can see the average ratings of brand on year to year basis. As most reviewers on amazon.com are United States based, we also represented the data on google map to display the performance of each brand on the states level showing the counts of reviews of search term by the user. One notable limitation of this paper is that, the search results return from a query from amazon.com is not consistent leaving some reviews not seen by our crawler. Also not all reviews has the location indicated

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