**Panasonic LCD TV**

**Data for this assignment is provided in an Excel Sheet**

**USING CUSTOMER REVIEWS TO GUIDE PRODUCT DEVELOPMENT STRATEGY**

Panasonic is in electronics manufacturing business. Panasonic's division than makes LCD TV's is under pressure from the CEO to increase sales. The Chief Marketing Officer and the Chief Operations Officer of the company are strictly against changing the price of the TV's as they believe that on average Panasonic sells its TV's cheaper than its competitors which include Samsung, Sony, Toshiba, Vizio, LG and Philips. After brain storming with his team, the TV division head Hiro Ito is determined that the only way forward is to improve the product quality. However, given the economic downturn the funds available for investing in R&D are quite limited. And the cost of improvement of any feature is exponentially increasing in the extent to which the feature is improved. Further, there are differences of opinion among his team regarding which aspect of their product they should improve.

After intensive discussion amongst themselves, they feel that they should try to gauge how they consumers thought of them in comparison to their competitors. They approached the new UGC sub-division within the marketing division. The UGC division was set up to capture what their customers were saying about them on the web. While this division was collecting a lot of data generated regarding Panasonic by its customers, UGC division head Yuji Hukiri was struggling with a way to show the business value of his division. This opportunity arrived at the right time for him and he was quite happy to help Hiro's team in the endeavor. They quickly decided that they would focus only on product reviews and collect data not only themselves but also on their competitors.

Yuji’s team quickly created an exhaustive list of all websites which provided customer generated product reviews including Amazon, Epinions, etc. They also decided to collect review information from experts (e.g., consumer report, etc.) regarding their and competitor's products. Using text mining and sentiment analysis tools they identified six features which the consumers talked the most about in their reviews: Video quality, Sound quality, Appearance, Number of Features, Ease of set up, and Life span. Yuji's team converted the text data regarding features into a numeric data on a scale of 0-5, where 0 meant lowest satisfaction and 5 meant highest satisfaction for consumers. For example, if Panasonic got a rating of 4 and LG got a rating of 3 on video quality it would mean that on average customers are more satisfied regarding video quality of Panasonic than LG. Hiro's team was excited at getting this data but now they faced the issue of how to analyze this data. One of the team members suggests to focus on that feature of the product where they lag their competitors according to their consumers. She argues that this is how they have done in the past. However, Hiro is not fully convinced with this approach. He believes the data the UGC division provided is much richer and he may be able to get information on not only how they are rated in comparison to their competitors on various features but also on what features the consumers value the most. Hiro's team has approached you to analyze the data collected by the UGC division and help them in devising the appropriate strategy forward.

They want you to figure out where they stand in each feature (each user rating category) relative to their competitors, and if investing in the feature where users rate them lower than their competitors is the best strategy. If not, what would you recommend? They want to get a ranking for features in term of where they should consider investing first. Assume that the cost of improving the feature is same across all features. For example, the cost of improving the video quality so that the customer rating for video quality goes from 4 to 5 is the same as that for improving the sound quality so that the rating for sound quality goes from 4 to 5.

[If you do your regression in Excel, please submit your worksheet along with your assignment]

Note.

1. You may want to consider regressing "units sold" or "total revenue" on price, ratings, and product aspects like Screen Size, Pixel, Motion Rate.
2. When you account for product aspects, you may want to do it using dummy variables. In the excel sheet I have already created corresponding dummy variables for your convenience. For each categorical variable (i.e., Screen Size, Pixel, and Motion Rate), I have already dropped a (base) dummy (size=19”, motionrate=60, pixel=720, respectively) to avoid multicollinearity problem, so you can include ALL dummies in your regression model.
3. (Optional, for extra credit, 2pts/20) You may also want to use Price diff as an independent (exploratory) variable to account for the effect of competition among manufacturers. Price diff is the difference between the focal product's price and the average price for that segment, where segment is defined by the combination of product aspects (Screen Size, Pixel, and Motion Rate). You can calculate the average price using pivot table or in whatever software/tools you choose.