Sentiment Analysis on Customer Discovery

An AI-Powered Marketing Solution Using Sentiment Analysis on Customer Discovery Data

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***Abstract*—Understanding what customer wants in a product that solve an existing problem is crucial for a business idea to succeed. Our research problem was to understand the sentiment of our potential customer who might be purchasing our product given that we created a solution to their business problem. In this project, we perform sentiment analysis on a customer discovery survey data performed by us and understand their sentiment towards the proposed product. We utilized Natural Language Processing(NLP), TextBlob for processing the text data to gather preliminary analysis. Furthermore, Exploratory Data Analysis was performed to analyze the quality of a data. The polarity of our data was positive with the sentiment value of 0.030120, which is closer to a neutral tone. As the experiment was conducted on a small data set, future work will include larger data and a machine learning model feeding data through APIs.**

Keywords: Sentiment Analysis, Natural Language Processing(NLP), Customer Discovery.

I. Introduction

Sentiment analysis, in simple words, can be called as opinion mining. It is a natural language process(NLP) technique which can be used to determine whether a data is positive, negative, or neutral. Sentiment analysis is performed on textual or a media data to help businesses to access the feedback of customers regarding their experience with a product.
In our research, we adopt this method to analyze the sentiment of our potential customer who might purchase our product if the product meets their expectation. The survey data contains their existing problems as well as the problems with the existing products in the market. Our product attempts to solve these problems by making cost effective, ease of use and durability. To do so, we carefully analyze the survey data using natural language processing techiques.

II. Methodology

See appendix A.

III. Results

A. Word Cloud

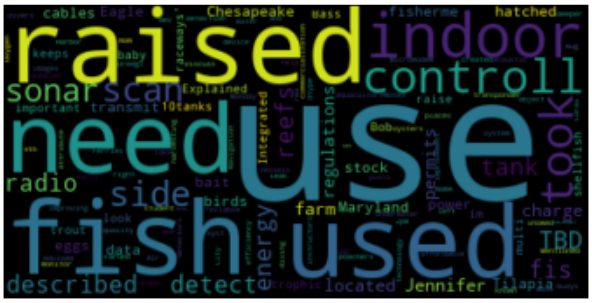

Fig. 1. Word Cloud of Text Data

B. Sentiment Analysis

The polarity of our data was positive with the sentiment value of 0.030120, which is closer to a neutral tone.

IV. Future Work

We will wrangle data from more surveys by ourselves. In addition, more data about the existing products will be wrangled through various online sources.

V. Conclusion

In this way, we performed a sentiment analysis on the text data of our survey data.We found out that the data is positive. In the future, we will wrangle data from various source and create a comprehensive analysis.

APPENDIX A
CODE IMPLEMENTATION

Run the code at Google Colab:
https://colab.research.google.com/drive/1PWxiwcoLlKguR0ZUsdIjdmktVoD0zb3B

APPENDIX B
NATURAL LANGUAGE PROCESSING (NLP)

A. NLP Pipeline

1) *Data Cleaning:*
2) *Tokenization:*
3) *Stopwords Removal:* Remove any words that won't values to analytic part.
4) *Stemming:*
5) *Vectorization:*
6) *Classification:* Classify the words as positive, negative or neutral.

B. Natural Language Toolkit (NLTK)

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VERSION HISTORY

Version	Commit
1.0.0	Intial Commit
1.0.1	Summarized key aspect of the paper