

Chapter 92

Tracking How a Change in a Telecom Service Affects Its Customers Using Sentiment Analysis and Personality Insight

Ammar Adl

 <https://orcid.org/0000-0001-5201-2116>

Faculty of Computers and Information, Beni-Suef University, Egypt

Abdelsadeq Khamis Elfergany

Faculty of Computers and Information, Beni-Suef University, Egypt

ABSTRACT

Tracking the effect of change a telecom service on customer feeling is an important process for telecom companies. As a result of tangible growth and large competition among telecom companies, customer retention and satisfaction are the most important challenges faced by telecom companies nowadays. Customer retention can be achieved by identifying the feeling of the telecom customers after changing service and take care of the customers by modifying the services that aren't accepted by its customers. Hence, this article was done by using a combination of four stages of: text pre-processing, personality analysis, sentiment analysis, and a chatbot system. This article shows the effect of using the personality traits, agreeableness and emotional range, with sentiment analysis to help reaching a full description of customer feel. Combining the sentiment analysis Naïve Bayes technique in the natural language processing and personality insights pre-learning stage and adding feedback using the obtained results achieves higher accuracy than using the traditional sentiment analysis techniques.

DOI: 10.4018/978-1-6684-6303-1.ch092

1. INTRODUCTION

All companies depend on stakeholders, human resources, and customers as their backbone especially the telecom companies, that more interested to proactively interact with its customers on the significant increase in the number of telecom companies, that leads to customer migration from one company to another and create continuous warfare between companies. So, all these companies try not only to retain their current customers but also to increase them (Marchand et al., 2017). Prediction tasks have many useful applications ranging from tracking opinions about service to identifying the best and bad service and predicting of the telecom customer satisfaction, this prediction is based set of statistical studies.

Telecom companies may get a bad rap when it comes to customer experience. All too mostly customers feel that service inappropriate with their expectations, but those complaints useless as if it falls on deaf ears (Kasemsap, 2017; Aikhuele & Turan, 2018). Over the past years, there were trials for finding a solution to retain the telecom customer loyalty by found a positive correlation between service recovery and customer satisfaction (Ibrahim et al. 2018). A lot of companies are suffering from problems with integrating strategic planning into their daily works and promotional campaigns. There are many needs to suggest how strategic planning can solve these problems (Galli, 2018). But despite the poverty of the telecom companies in detecting customer sentiment, few companies have made the customer care as the first target and empirically test and evaluate the direct and indirect effects of service encounter constructs of service quality (Gera et al., 2017).

Hence, The proposed work tries to show how the use of customer textual data that come from an AI chatbot helps to determine if the telecom customers are willing or not with the new service, if not, how can we help them?, and helps to find a solution for a set of issues like what is the percent of success and acceptance of the new service? What are the services that a telecom customer does not need? And what the services that win the satisfaction of the customers? The proposed system can help the telecom companies to live day per day with its customers from the behavioral side; If it can predict and know the sentiment and behavioral meaning in each response. A question like what is the emotional affection that the change in a service lave? or do they really love the new feature added? Can be answered based on the proposed work in this paper.

The problem entities are how to understand and use the agreeableness and emotional range personality traits and its sub-traits with the sentiment analysis, emotional values of the telecom customer's conversations as shown in Figure 1, and how the use of this traits help for reaching to a detailed report about customer feel towards the telecom company.

1.1. Personality Traits

On the other hand, and based on (Sorić et al., 2017; Menidjel & Bilgihan, 2017), a common assumption is that personality traits act as a control system (Roberts & Woodman, 2017). People may stray briefly from their needs, but they will then tend to their needs by time or the change in the environment after defeating the outside pressure. Under this type of models, one could find a relationship between customer traits and customer behavior that helps in tracking the telecom customer feel. So, this work tries to use the customer personality insights and compute the agreeableness and emotional range traits that help in tracking customer feel (Abdulla & Suresh, 2017).

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/tracking-how-a-change-in-a-telecom-service-affects-its-customers-using-sentiment-analysis-and-personality-insight/308572

Related Content

System Analysis and Design for Document Classification

(2021). *Developing a Keyword Extractor and Document Classifier: Emerging Research and Opportunities* (pp. 137-144).

www.irma-international.org/chapter/system-analysis-and-design-for-document-classification/268467

Constrained Density Peak Clustering

Viet-Thang Vu, T. T. Quyen Bui, Tien Loi Nguyen, Doan-Vinh Tran, Hong-Quan Do, Viet-Vu Vuand Sergey M. Avdoshin (2023). *International Journal of Data Warehousing and Mining* (pp. 1-19).

www.irma-international.org/article/constrained-density-peak-clustering/328776

A Survey of Parallel and Distributed Data Warehouses

Pedro Furtado (2009). *International Journal of Data Warehousing and Mining* (pp. 57-77).

www.irma-international.org/article/survey-parallel-distributed-data-warehouses/1826

I-BAT: A Data-Intensive Solution Based on the Internet of Things to Predict Energy Behaviors in Microgrids

Antonio J. Jara, Luc Dufour, Gianluca Rizzo, Marcin Piotr Pawlowski, Dominique Genoud, Alexandre Cotting, Yann Bocchiand Francois Chabbey (2016). *International Journal of Data Warehousing and Mining* (pp. 39-61).

www.irma-international.org/article/i-bat/146852

Building Sentiment Analysis Model and Compute Reputation Scores in E-Commerce Environment Using Machine Learning Techniques

Elshrif Ibrahim Elmurngiand Abdelouahed Gherbi (2022). *Research Anthology on Implementing Sentiment Analysis Across Multiple Disciplines* (pp. 964-999).

www.irma-international.org/chapter/building-sentiment-analysis-model-and-compute-reputation-scores-in-e-commerce-environment-using-machine-learning-techniques/308530