A Health Insurer improves customer service quality assessment using Natural Language Processing

The Organization

One of the leading Health Insurers in India with a large number of customers. The company has a nationwide distribution network spread across the length and breadth of the country. Company is a leader in adopting new age technologies to improve customer service quality.

Challenge

The company gathered a large number of call scripts for the calls made to customers who have claimed health insurance in recent past. The aim of the calls was to receive service quality feedback from customers about the claim process. The challenge of analyzing hundreds of call records was that it required a huge manual effort. Categorization of topics covered by the customers in their feedback was tricky because it required good understanding of the context and claims related process knowledge. Further, assigning sentiment to each customer call was difficult because it involved personal judgment. Such a critical activity cannot be left to untrained staff whereas a senior resource may not be able to allocate much time daily for an activity.

Solution

The company engaged RSutra to implement a Natural Language Processing (NLP) based software solution for automatically analyzing the customer feedback calls. Getting a software to analyze customer verbatim was challenging because customers do not follow a fixed pattern in terms of topics, grammar, vocabulary or language. RSutra team proposed to implement Multi-class Topic classification and Sentiment Analysis to take on this challenge. This classification involved leveraging the leading Natural Language Processing (NLP) technology along with the technique for estimating Polarity of the sentences. RSutra team began with collating past year's call data and manually tagging them for the topics and sentiments.

A **NLP-based solution** that can analyze customer call scripts and **identify topics covered in calls** along with **sentiment** of the caller

Magic Numbers

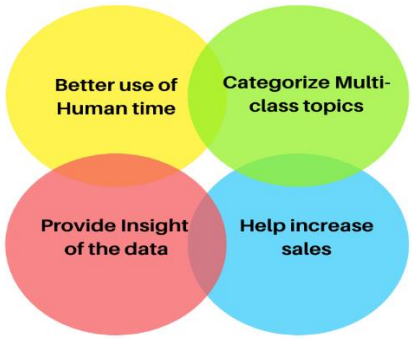
- **Able to categorize Multi-Class Topic Classification**
- **15** different categories of customer requests handled
- **~85% accuracy on** multi-class topic classification
- **Dashboard for customer feedback scores**

We used the tagged data of the past to train the NLP model, and once refined, the model perused the customer calls, categorized them into a multi-class topic (using techniques like creating a bag of words) and calculated the sentiment polarity of the same.

The Multi-class Topic classification identified topics like process speed, process smoothness, cashless facility, claim approved / rejected and customer care responsiveness from the calls. Further, each topic was assigned a sentiment (positive, negative, neutral) to assess if customer's feedback on the topic was in a positive or a negative tone. For hundreds of customer calls, the general trend regarding topics and sentiments of the customer feedback calls was collated in the form of a dashboard.

Benefits

Our solution enabled the company to analyze hundreds of call scripts within a matter of minutes thus saving the efforts of manually reading and analyzing the texts. The solution provided insights about what customers thought about the claims process and what were the pain areas and satisfactory aspects of the process. The insights provided vital inputs to the company in identifying improvement areas in the health insurance claims process.



Results

The health insurer automated its customer call analysis process to identify 15 different categories of topics that customers covered in the calls. The multi-class topic classification gave an accuracy of nearly 85% in identifying topics of the call. Sentiment related to the calls were assessed with and accuracy of over 75%.

Solution Highlights

- Multi-class Topic classification and Sentiment Analysis based software robot
- **Natural Language Processing (NLP) used** to analyse customer call scripts
- Offers **Insights** into what customers **think about claims process in terms of strengths & bottlenecks**
- Generation of daily dashboard outlining call topics and sentiment

About RSutra Analytics & Consulting

RSutra Analytics & Consulting offers services in Data Science, Artificial Intelligence, Machine Learning, Advanced Analytics, Big Data, Robotic Process Automation, Geographical Information Systems & Cloud-based technologies

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