CASE STUDY



BUILDING CONVERSATIONAL Intelligence

Abstract

Conversations matter, especially on social media. That is why Infosys BPM built a hyper-automated solution to analyze social media conversations for a leading US telecommunications conglomerate, which helped it better understand and address negative customer experiences, while saving \$350k in operating costs and reducing cycle time by 99.8%.



The client

Infosys BPM's client is a leading USheadquartered telecommunications conglomerate that provides communications and technology solutions, information, and entertainment products and services to consumers, businesses, and governmental agencies.



Lost in conversations

The client offers customer support over multiple social media platforms such as Twitter and Facebook, for a wide range of services and products. Because of its huge customer base, these customer support activities regularly produced a mammoth volume of unstructured social media data, presenting the client with four key challenges:

• Lack of efficiency in systems: Processing the social media conversations to decipher the key conversation topic required a large amount of time and resource allocations

- Poor visibility into root causes: Despite some limited insights derived through processing the social media data, the client had no clear visibility into the root causes of negative user experiences
- Blurred sentiment: sentiment analysis was usually unclear due to end users' usage of emojis and competitor references
- Low user satisfaction: end user satisfaction was low due to irrelevant and delayed implementation of remedial actions based on social data analysis inputs

The client approached Infosys BPM to develop a robust solution that would address these challenges, efficiently and accurately predict negative user experiences, and offer insights into their root causes.

Building an intelligent machine

Infosys BPM deployed a team from its digital transformation services (DTS) practice to study the client's context and challenges and build a highly automated system utilizing machine learning (ML) and deep learning (DL) techniques. The system would process social data through several stages: refining, classification, performing sentiment analysis, and conversation mapping.





The first step was to reduce the volume of social media data that needed to be analyzed. The team developed an unsupervised ML/DL topic model based on different domain-based conditions and customized it to filter out irrelevant data. The model ensured that only those social media conversations that were relevant to the client would be used as inputs for the following stages.

Next, the team developed a refined sentiment model that considered not only the mentions of the client in social media posts but also the mentions of competitors and non-competitors. The model also included a separate module on emoji sentiment which resolved discrepancies between social media post texts and the emojis used in them. This helped with capturing the true sentiment for a social media conversation and with identifying user experiences that were genuinely negative.

After this, the team worked on developing an automated algorithm to classify the conversations under several topics and to get a glimpse into the root causes of the negative experiences associated with them. Team members created multiple ML/ DL models and experimented with them using training data and capturing their performance metrics, and finally selecting the best performing model. The last module of the solution was built to carry out conversation mapping, through serialization and standardization of the conversations at an author level. This gave a better understanding of the conversations' contexts, as all previous interactions were tagged and could be further utilized for deeper analysis.

Finally, the team created a pipeline to bring together the various components of the project into a single automated flow. Broadly, the pipeline included everything right from data landing until final prediction.

Scoring big

Once implemented, Infosys BPM's hyperautomated solution was a huge success. It accurately started identifying various topics relating to negative customer experiences, offering deep insights into their root causes, and predicting potential customer churn. The solution's multi-dimensional interactive dashboard provided the client with needed metrics and insights for monitoring the performance of the overall social customer service, using which the client was gradually able to improve its net promoter score.





For more information, contact infosysbpm@infosys.com

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