



ENHANCING DIGITAL ASSISTANCE

Abstract

To communicate effectively with humans, voice-enabled intelligent devices need to be trained using natural language data that is well annotated. This case study details how a leading American technology company jointly worked with Infosys BPM to enhance annotations with efficiency of 120%, to make their devices smarter.

The client

Infosys BPM's client is among the largest technology companies in the US and is well-known by the market for baking in innovation and creativity into its portfolio of high-performance products and services.

A torrent of words

In most of its products, the client offers an intelligent virtual assistant which uses natural language processing (NLP) to understand and respond to user conversations. The assistant is powered by a machine learning (ML) system that needs constant training to make the processing of human conversations more effective. This requires annotating large banks of natural language data to obtain diversified output for an enhanced training model.

However, the organization did not have a mature annotation framework and lacked in-house expertise in large scale annotation. Thus, it had a large backlog of work units needing to be completed in quick time. Further, it did not have any tracking mechanism for reviewing submitted annotations with the result that the quality of ML training output was very low.

With these challenges the company needed a partner to support its annotations effort and brought Infosys BPM on board to help with a scalable and cost-efficient solution. Infosys BPM was tasked with significantly improving the quality of annotations and later to quickly ramp up the quantum of annotations done.



Deploying the grammarians

Natural language annotation is a laborious and complicated process and requires both domain as well as linguistics expertise. Infosys BPM's digital center of excellence (CoE) first conducted a pilot for the client which required closely working with the client's data scientists to assess the ML algorithm and execute and enhance its results. Studying the methods being used for annotating data sets, the pilot team created process workflows and suggested several technology and tool improvements to enhance process efficiencies.

After the successful completion of the pilot project, the digital CoE deployed a team of right-skilled resources in a phased manner to scale up the efforts. These annotators were certified to meet stringent requirements, and the team quickly ramped up from 30 FTEs to 120 FTEs in just 2 months.

The growing Infosys BPM team providing multi-language support first helped the client clear all the annotation process backlogs, and then worked on streamlining the processes further and designing, instituting quality check workflows.

More speed, better speech

The process improvements suggested by Infosys BPM and the work on developing and enhancing annotation tools improved the production per annotator by 14%, helping the team achieve 120% efficiency. Thus, within just six months of implementing these improvements, the client was able to handle 1.2 million utterances with the conflict rate reduced by 40% and the training time optimized from 21 days to just 15 days. Without question, today the client's intelligent devices are ways smarter than ever before.



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