ROHAN - INTRODUCTION, PS AND RELEVANCE OF THE PROBLEM STATEMENT

Customer service is a direct interaction acting as a critical factor in maintaining the goodwill of a company. Interactive Voice Response(IVR) was first introduced in 1962 and is still in use by many firms in their customer support systems. This monotonous menu of options is largely time-consuming and leads to a poor customer experience. A majority of the callers dislike IVRs as they have to go through the sequence of options again and again. This leads to a loss of valuable time which ultimately result in monetary losses.

Further, if a call to customer support gets disconnected in between, one will again have to go through the same sequential options before they get their desired option.

Thus a better and more effective alternative is needed to these sequential IVRs which can prevent wastage of time and money, prevent companies from losing their customers and ensure a better customer experience.

ANKIT - SOLUTION PROPOSED, OUR INNOVATION

So after getting a briefing on our problem statement, let's talk about our proposed solution.

ARBOT is what we call it - and it is a voice bot

1. User calls the customer service, bot asks the user what help do they want.
2. User speaks out his request in natural language
3. Bot analyses the speech for a trigger word(or keyword). Now based upon this trigger word user is channelled to his desired service without having to go through IVR menu options.
4. And the customer receives his desired help

Now how is our product new and different

1. So we are integrating the features of a voice-based assistant to the customer support service
2. Instead of analysing the entire request sentence, we will focus on the trigger words thus decreasing our required processing power
3. Trigger words can include balance, offers, callback etc
4. We use a bidirectional model, why? So that the position of the words spoken is taken into account.

TRISHA - MARKET OPPORTUNITY, COMPARING WITH PRESENT SOLUTION, SEGMENTATION

DEEPU - SWOT ANALYSIS, FEASIBILITY ANALYSIS

We present before you a SWOT analysis of our proposed business.

As strengths, our product offers faster response to customer queries, is efficient than IVR(**Interactive Voice Response System**), ensures customer satisfaction and ease of use.

Since global market of IVR is continuously growing and companies across domains is using it, our idea has a nice opportunity for success.

Since it is a predictive and fast model, it is slightly inaccurate and faces quite a threat from advanced chatbots.

Discussing about feasibility, our product stands on all expectations, being operationally, economically and technically feasible as you can see our description.

OINDRILA - COST ANALYSIS, TOTAL PRICING, COMPARING WITH COMPETITORS

This is what the product will cost us:

1. Under research cost, we will require the GPU power for the initial training of the model, it is a long term cost
2. Now we divided the resource cost into two-Expected future cost, which is a periodic cost once per year for fine-tuning the model for its improvement. And deployment cost, which will cost us 12000 Rs./subscription for the deployment of one unit of our model for 5000 minutes on AWS Fargate.
3. Taking into account, the costs mentioned above, our product will cost us Rs. 15750 per unit for 5000 minutes of deployment. With a 20% profit, we sell it at Rs. 18900, taking total initial investment requirement for 20 units to Rs. 3,22,500

IBM Watson assistant enterprise offers webchat, sms service and messaging channel integration as well, but costs around 32000. We lowered that cost with frugal engineering.

RAUSHAN - FUND PLANS, TEAM CONTRIBUTIONS, ACKNOWLEDGEMENT

We can explore multiple options to get funds for our proposed business, we will take the advantage of Pradhan Mantri Mudra Yojana which provides loan upto 10 lakhs. For that we can approach the lending institutions like the commercial banks or the small financial banks, or we can directly apply online to the official website www.udyamimitra.in. Moreover, we can negotiate with the telecom service providers for investment which will act as 2 way benefits for us. Also we can approach angel investors.

We would like to thank the respected professors for giving us the opportunity to present our NLP based bot.

Important links/information to quote if required:

1. 40 Call Center Stats From 2021 & 10 Metrics to Track in 2022 (timedoctor.com)
2. Customer service software provider - Kana
3. To take into account the order of word appearance we use bidirectional network. I will give an example - consider two words callback and no callback. So if we just search for the trigger word ‘callback’, both the requests or statements would lead to same interpretation while they are entirely the opposite. A bi-directional neural network helps us distinguish between these two.
4. Speech recognition accuracy can be as high as 89.5% through BERT model as published in the paper SPEECH RECOGNITION BY SIMPLY FINE-TUNING BERT by Wen-Chin Huang and others in a research by some Japanese and Taiwanese universities.
5. Amazon Fargate is a compute engine for Amazon web services that allows you to run containers without having to manage servers or clusters.
6. According to a research by the organisation samsung research america new trigger words can be implemented with comparatively less training.
7. Training of the model - Just to give an example of how we will be training the model- say we will take a 1 hour audio clip of a person speaking easily available on the internet. Then we will be taking 10 second clips out of it.
8. According to a survey published in hubspot, we found 69% prefer to use phone support over chat or “other” support channels.
9. Accuracy score of above 85% for trigger word detection in the research paper we have quoted.