Deakin University

Chatnow

Project Scope

Project Sponsor
Now Finance

Project Team
Team 7

Dave Ebbelaar

Pieter Geurts

Monica Appanderanada Kalappa

Nathan Hughes

Sravan Kumar Mallela

Adnan Hafeez

Nguyen Minh Nhat Pham

Document Version 1.2

Document Revision History

Date	Version	Editor	Reason	Supervisor Signature	Client Signature
01-09-18	1.1	Pieter	Small updates		
29-09-18	1.2	Pieter	Update to Ex. Strategy and Limitations		

Motivation / Problem Description

Due to an increase in the customer base of personal loans and debt consolidation company Now Finance, the online customer funnel is experiencing increased traffic. This puts a higher workload on the customer support department of the company, possibly resulting in slower response times and ultimately to a lower perceived customer satisfaction rate. In order to tackle this problem, the goal of this project is to implement a chatbot which will (partially) offset this increase in workload by responding to clients automatically instead of them making use of the resource extensive live chat functionality. Ideally, our chatbot would manage most of the customer support of the company, thereby eliminating some of the financial costs related to having a large staff of employees without sacrificing the quality of the customer support. More specifically, as offering outstanding customer service is very important to the company, reducing the workload while at the same time making sacrifices in customer service is not desirable.

Further objectives include creating a chatbot which is low cost compared to competitors, is functional on multiple platforms like Facebook Messenger, Web and WhatsApp and has clear and easy-to-follow instructions on how to update or modify its several components.

Context

Current state of the art chatbots use selective models to select responses from a set of possible answers set by the client. Selective models are preferred over generative models because they allow for greater control over the chatbot's responses. IBM Watson and Google Dialogflow are examples of such selective chatbots. However, the underlying models and algorithms can be implemented using deep learning libraries like Tensorflow as well to create custom chatbot models. Advantages of custom build chatbot models include:
- No costs
- Greater control over the models
- Not Bounded to third parties.

Cons of using custom build chatbot models include:
- Lack of User Interface
- Lack of Natural Language Processing

However, these features can of course be implemented but would require more work.

During the second sprint we decided to drop Tensorflow and continue with IBM Watson and Dialogflow.

Value Proposition
- Reduction in necessary employees working in customer support, resulting in lower operational costs.
- Higher customer satisfaction rates due to increased response times and lower waiting times.

- 24 hour customer support availability
- Compatible across multiple platforms

Core Idea/User Stories/Requirements

- Use Natural Language Processing to automatically detect the intent of the customer to provide an answer that corresponds to that particular question.
- Implement contextual capabilities to keep track of the conversation.
- Use Natural Language Processing to extract user input from the customer's response in order to provide personal advice.

Target Deliverables
The following goals have been identified as dependencies that need to be addressed early in the life cycle of the project.

1. **A chatbot that:**
   a. **Greets the user and asks if it can assist the user with something**
   b. **Analyse the response by the user**
   c. **Interpret it using NLP**
   d. **Classify it correctly by comparing it to a database of questions**
   e. **Return the correct answer which corresponds to the question asked**
   f. **Finish the conversation by thanking the user for using the service and ask whether the user has another question.**

Notes:
- *This is a prototype based on data we retrieved ourselves by analysing the FAQ section of the company. The real data will probably be provided to us next week.*

Roadmap
The roadmap to the execution and delivery of this project is detailed subsequently.

Execution Strategy

Following the meeting with Now Finance; we are going to work on the following:

1. A functional chatbot which is able to answer questions perfectly about some of the most recurring problems customers are facing.
2. A consultancy report which described several aspects about the integration of a chatbot. The document is already work-in-progress, but we now have a clearer picture of what Now Finance would like to know.

Limitations, Constraints and Considerations

The limitations, constraints and considerations of the project are as follows:

- Budgetary matters, as we dropped the open source option Tensorflow.
- Lack of availability of customer's data to train chatbot effectively.
- No tests have been performed yet, something for SIT784
- Server is responding to POST requests to serve chat responses, which may not be easily scalable.