Chatbot Design Principles

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Nowadays, software is getting more and more customized and at the same time, it is necessary to make software accessible for users that do not have any technological background. Fortunately, chatbots can help with both issues. Chatbots allow users to interact and communicate with software by using their own words. Therefore, software can become easier to understand and use. Chatbots also allow the interface to save the user preferences. By doing this, software can adapt to the interest of the users.

Chatbot Language

Chatbots should use the same language and words as the user, and avoid using technical and system-oriented terms. Chatbots can mimic how users normally speak if the design is oriented to certain populations. Therefore, before the creation of the chatbot, it is necessary to have a "solid understanding of the audience we seek to appeal to" [1].

To follow the point of the chatbot remarks and to choose responses that fit coherently into the discussion how to follow each other thoughts?

There are three main points that users must share in order to understand and follow a conversation:

1.- Common situational knowledge

Mutual understanding depends on situational context. The user and the chatbot should **share the same information. "to be on the same page"**. -¿ how much and what kind of detail is (and is not) stated. Prior and external knowledge about the topic that is being discussed. (previous information about what we are talking about)

2.- Common semantic reference

Users and chatbot should share the same semantic knowledge (Rachel) -¿ **understand not only the meaning of each other's words but the particular meanings those words take on in the immediate semantic context**. (Rachel) p.6 Identify a current discourse context -¿ with every utterance a listener must grasp the relevance of what is being said to what what has being said before if the listener is not capable to grasp the utterance in the conversation, the listener will be lost and confuse, and he or she will need to ask clarification to the speaker. "What does this have to do with what we were talking about? the conversation flow should follow an order in order to make the comments undestandable to the people invlolve into the conversation.

In order to have a meaningful conversation speakers has to select and order their comments so that the relation of the remarks are easily understood.

3.- Knowledge about the structure of the conversation itself.

Changing the conversation topic. Changing about the detail that they are speaking, if they are speaking about a certain graph and then the conversations evolves about the color to use. Shifting the conversation topic. Structural development of the conversation. (twist and turns).

avoid an incoherent conversational flow. and ungrammatical sentences!

we must: engage in the conversation. avoid shift topics and ambiguous references that are clearly only to themselves.

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Chatbot conversation flow

The conversation between the user and the chatbot should not lead to any ambiguity about what to say in the conversation. The flow of the conversation should be natural and evident*

Timing

Being an active participant

Being an active listener

Avoid over sharing

User's Control

Users are accustomed to and like having control over a software. Therefore, it is extremely important to make the user feel that he or she has the control over the interface. Chatbots should not make users believe that they are powerless over the interface; they are there to help users to have a better experience using the interface. Chatbots should be guides or an additional aid that allows users to understand the interface and have better results. According to Sheneiderman [2] it is "necessary to give the users the feeling of being in control and therefore they can be responsible for the decisions they make."

User's Freedom

It is normal that users make mistakes when they are choosing different options in an interface. Chatbots should have the ability to undo or redo the changes that the user just selected. In that case, users know they are able to undo an unwanted change triggered by an misinterpreted message or a mistaken click [1]. In addition, the users should be able to ask for extra information at any point of the conversational flow.

Error Messages

Chatbots should express error messages in a straightforward way. They should not use codes or technical words in order to avoid confusing and stressing the user. Chatbots should be able to express that an error has occurred and add suggestions about how to solve or undo that error.

User's Recognition and Recall

According to Scott, users do not like to read a large amount of text : "they will read the first message and then their eyes glaze over. They skim the rest of the text" [1]. Therefore, chatbots should keep their dialogues short and give the users a small amount of options, in order to avoid users getting lost or feel overwhelmed. Besides, users do not remember details of the options given by an interface. By avoiding reading a large amount of text, users may misunderstand the chatbot's message and finish with an unsuccessful result. The design of the chatbot dialogue should only have relevant information to help users with their tasks and prevent a dull interactions with the chatbot.

Chatbot's Personality

Chatbots' personality is what it makes a chatbot different. By adding extra information into the dialogue and having a matching language, the chatbot can have a distinctive personality. However, designers should be careful to not include too much additional information that makes the user feel bored or annoyed. The chatbot's personality should take into account the target audience for which it was designed. The personality should match with the users: therefore, how friendly, sarcastic or humorous should only depend on the people who will use the chatbot. Users like to interact with chatbots in a human way [1]. For this reason designers should consider how to engage users into the conversation. According to Scott [1], there is a difference between the content (relevant information to help the user) and the medium (the chatbot's personality). Users need to be entertained and at the same time be helped. The chatbot's success may be defined by how designers balance between entertainment and guidance.

Chatbot's versatility

Chatbots should be versatile enough to be able to understand open questions and commands written by the user. If a user wants to use a command in the interaction with the chatbot, the dialogue should continue smoothly without breaking the flow.

Chatbot's documentation

Chatbots should be used without the need of extra information. How to use a chatbot should be a simple conversational flow. However, there are some users that like to deeply understand how the interface works and detect its limitations. A chatbot appropriate documentation should be precise and short. It should provide extra information about how the chatbot can help users to focus their tasks. Besides, it also "should include a concrete list of what steps can be carried out" and the critical points of the chatbot [1]. Finally, the chatbot should provide an easy way to access the documentation.

References

[1] Kevin Scott. Usability heuristics for bots. Chatbots Magazine, May 2016.

[2] Ben Shneiderman and Pattie Maes. Direct manipulation vs. interface agents. *interactions*, 4(6):42–61, 1997.