Chatbot user interface design

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Topic of the assignment: Creating a chatbot user interface design framework for the Holmes cyber security home network router for the company DistributIT.

Keywords: *cyber security, chatbots, user interface design, Internet of Things, internet, virtual assistant*

DistributIT | Background information of the company

DistributIT is an innovative start-up located in Enschede which focuses since 2016 on the development of practical solutions within the cyber security domain. The company's mission is to contribute to a safer internet. Doing so by developing innovative and understandable software. In order to make users aware of the risks of the internet, DistributIT develops a solution within their application to inform and alert the users of their *Holmes* cyber security internet router. With the increase of Internet of Things-devices and the security threats it is necessary to keep the home network safe. For the assignment, a chatbot user interface design framework was made for the app that comes with the Holmes router.

In order to make the user interface design framework the following main research question has been composed: *What are the requirements of designing a chatbot user interface to be useful to the users of the Holmes router?* To give answer to this, three sub questions were made; w*hat is a chatbot?*, *what are the wishes and demands of the chatbot in case of the Holmes router?, What are the do's and don'ts by designing the user interface of a chatbot?*

A chatbot could be seen as a virtual assistant to its user. A chatbot is a way to communicate in a digital way to humans. There are nowadays a lot of different kinds of chatbots with their own specific usage. One of the first worldwide well known virtual assistants might be *Clippit,* the jumping paperclip from *Microsoft Office.* In the case of the Holmes cyber security router the chatbot have a couple of functions that it has to fulfil; 1. Making conversations with the user of the Holmes application, 2. Detection of new devices on the home network and alert the user, 3. Anomaly detection, 4. Teaching the user about cyber security, 5. Blocking devices from the network, and as last 6. Give advice about cyber security.

To design the chatbot user interface research was done to know the details of all the parts where the chatbot is visible on your mobile device. From the basic elements in the application itself to the popup alerts on your main screen. The user get to know the chatbot even with their first contact by installing the application after downloading it from the application store. The chatbot is given the name *Watson:* a friendly virtual assistant. (*Figure 1*)

Figure 1: Watson the virtual assistant of the Holmes router

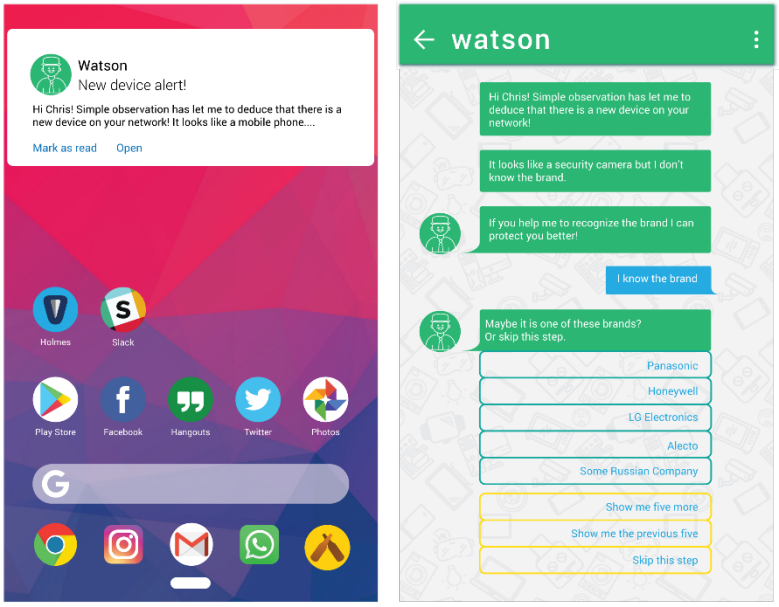

Figure 2: Watson alert and interaction with the user

Figure two shows an example of a 'new device alert' and a part of the conversation of the Watson part of the Holmes application. Take notice of the colour usage. The green side is used as the output of Watson, the input from the user is blue coloured. This is a result of a consistency in colour usage throughout the application and to make sure to distinct both sides of the conversation.

In conclusion to the requirements for making a chatbot user interface design, there are a lot of details that plays a role in the graphical outcome. From the avatar of the chatbot to the user interface of the chat. In addition to the done research, the effect of Watson should be measured to give answers to questions like if the users of the Holmes router like Watson and if he won't be ignored after a couple of weeks. All in all the first set up of rules of making a chatbot user interface was made; a first introduction to chatbot user interface design.

The development of the HOLMES router, the HOLMES app and the Watson digital security assistant falls within an SBIR-founded development program within the 3rd cyber security call tender by the RVO, under registration number SB2CS17009.