

Title : Redesigning the Age fi probe to foster portability and to create an active interaction between the visitor and the content

Exhibitions are constantly evolving with the rise of new designs and products in the market. In 2023, a group of researchers (Dr. Francesca Toso, Dr. Jodi Struge, Dr. Rens Brankaert, Dr. Maarten Houben, Dr. Janna Van Grunsven and Dr. Marco Rozendaal) participated in the 4TU. DU call for funding with an allocated budget to create a probe that revolved around their combined expertise as a team. The probe aimed to showcase the different dystopian scenarios : companion bots, enhanced abilities, monitoring and human care created by the video artist Lotje Van Lieshout depicting how one could age. The videos showcase previous research and tactic knowledge and serve as a research tool to gather feedback regarding the topic. The current probe was created by relying on existing products (EKKO by the Pleyade innovation team, IKEA and other thrift furniture).

However, the existing setup was challenging to receive feedback effectively and lacked flexibility, cups with RFID tags were used to switch between videos in the EKKO. Each cup was allocated to a scenario, and the user placed the chosen cup of their interest on the sensor to activate the videos. Despite creating an intimate experience, due to the presence of one screen and the ambiguity of the placement of the sensor, the experience was limiting. Therefore, the Age Fi probe was redesigned to be portable and to let users proactively watch videos and critically reflect on how they would like to age and voice out their opinions.

The double diamond design process was used to achieve the thesis's aim. From a research perspective, literature research was conducted on topics, such as elements to improve engagement, interactive physical user interfaces, and experiences in interactive installations etc. The research provided insights into the must-have elements in an installation to improve the interaction between the user and the content. Contextual analysis was conducted through interviews with one of the researchers, Dr. Jordi Sturge, and the video artist, Lotje Van Lieshout, to address the existing problems of the previous probe and brainstorm possible solutions from various perspectives. Another interview with Dr. Julieta Matos Castanos was conducted to analyze the design choices in “The cookery”. The existing state of the art was also analyzed through design websites and visits to interactive museums to observe common themes.

The research was followed by defining requirements and a thorough ideation phase with many iterations. The final concept was narrowed down to having different portable touch screens and physical elements that prevail in each video, as seen in **Figure 1**



Figure 1 : The different stations for the scenarios

The physical elements are designed to heighten interest in the videos, sparking visitors' curiosity about the background and motivating them to watch. In the top left corner of Figure 1, the companion bot setup is displayed, featuring a mockup bot identical to the one in the video. This bot can rotate its head, has a functional button on top, and a small LED screen. When the user presses the button, a pre-recorded voice introduces the companion bot, followed by an advertisement promoting subscriptions for other bots, mirroring the video's events. This triggers the user's recognition of the contents the user just watched in the video before moving to the feedback. LED bars are mounted at the base of the furniture housing the components. With motion sensors, the lights brighten as the user approaches within 100mm of the table. The color of the LED lights at each station matches the color scheme of the touchscreen casing, the physical elements, and the user interface, ensuring a cohesive visual experience. **Figure 2** portrays the set up of all the stations.



Figure 2 : Overall set up of all the stations

With the help of the user interface, the user is able to navigate through the different parts of the installation and experience it at their own pace. Figure 3 shows the first page of the user interface. The slider on top allows the user to easily jump between the video to the feedback. The horizontal arrow allows them to move to the next pages of the interface. The user will also be provided with headphones for an intimate experience if the setup location is crowded. For the method of feedback, the user receives two options: A microphone or a questionnaire, providing them with the autonomy to choose how if they would like to vocally voice out their opinion or through writing.

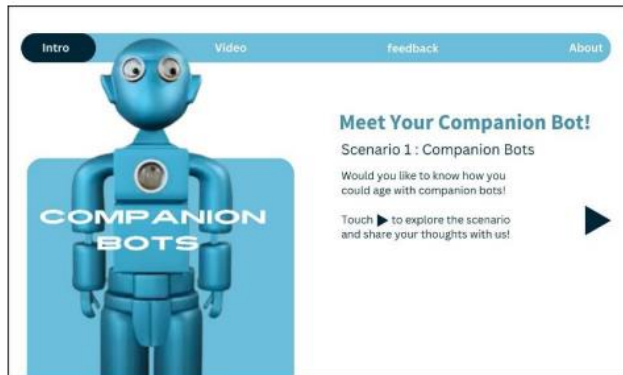


Figure 3 : first page of the user interface

The probe was further tested by having a mid fidelity prototype of the companion bot and a working user interface made from canva with university students of different ages and from different backgrounds. Although, the testing did not actively represent the target group, it showed that the users were engaged and was able to easily navigate through the interface and perform the intended actions.