**Review of Existing Attempts**

“FurFur”

When it comes to the specific design opportunity that our team has chosen to explore, it is known that there are already a considerable amount of existing artifacts with various levels of interactivity as well as the purpose of boosting the level of togetherness and closeness within non-collocated couples in romantic relationships. However, design solutions often do not fit well in the contextual environment of long-distance relationships. One of the examples of interactive artifact would be the robotic pet “FurFur”, an autobiographical design exploration conducted by Chien et al. [1] The participant showed great interests during the first-time use of the system which was not surprising considering the robot’s ability to imitate people’s hand movement as well as voice. However, their interests were quickly lost because the robot only supports superficial interactive functionalities which means the user quickly loses the freshness after only a handful of uses. On the other hand, since the system attempts to simulate a pet in a real-life setting, the expectation from the end-user would be just as high as a real pet, meaning that only a small difference in behaviour would become a critical defect for the system.

“Touch Trace Mirror”

Another artefact that supports long-distance communication is “touch trace mirror” [2]. It is an interactive communication channel that only allows asynchronous and collaborative messaging with the purpose of enhancing the level of relatedness and togetherness in a long-distance relationship. It is essentially a set of two mirrors and each of them to be placed in each partner’s accommodation. It is potentially a good way of communicating with couples in long-distance relationships, but it is unlikely to be considered as the primary means of communication for them. As an asynchronous means of communication, it is evident that limited amounts of information can be conveyed between the two people compared to synchronous communication channels such as video chat and phone call.

“Connected Candles”

“Connected Candles” is another excellent example of an interactive artefact that was used to enhance the level of awareness and closeness for people in long-distance relationships. [3] It is essentially a set of candles, one of them being a real candle, and the other is an electronic candle. The system only operates with the internet connection enabled, while igniting the real candle can illuminate the electronic candle on the far end of the candle set. The system showed a decent level of effectiveness in contributing to the communication within couples in long-distance relationships, especially for people in different time zones since the system is an excellent example of utilising asynchronous communication channels for mediating emotional communication in relationships. [3] However, although the idea of using candles for mediating intimate relationships showed some promise among participants, the limitations and deficiency concerning the design concept quickly emerged after the proper testing phase with some real end-users. The author brought up the general privacy concerns for using computer-mediated communication channels as the evidence for supporting such interactive design. Still, the unique feature was not enough to cover up its deficiencies in terms of the actual user needs. It is evident that the freshness of using the artefact would only last a few times of usage since its lack of interactivity. On the other hand, as an asynchronous communication channel, the communication pattern should be practical and meaningful enough to ensure that the end-user will be motivated to continuously use the system.

[1] W. Chien, M. Hassenzahl and J. Welge, "Sharing a Robotic Pet as a Maintenance Strategy for Romantic Couples in Long-Distance Relationships.", Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems - CHI EA '16, 2016.

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[2] J. Schmeer and T. Baffi, "Touch trace mirror", Proceedings of the fifth international conference on Tangible, embedded, and embodied interaction - TEI '11, 2011.

DOI: https://doi.org/10.1145/1935701.1935771

[3] Häkkilä, J., Li, H., Koskinen, S. and Colley, A., 2018. Connected Candles as Peripheral Emotional User Interface. Proceedings of the 17th International Conference on Mobile and Ubiquitous Multimedia - MUM 2018.

DOI: <https://doi.org/10.1145/3282894.3282909>