

Utilizing user centered design to mitigate security threats

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Interactive technology in our everyday life is growing by the minute, and so does the demands on these products to maintain usability and high security. Is it possible to utilize design and usability to mitigate possible security threats? This thesis thinks so, and especially explores the possibilities in using posters to maintain security awareness of the users.

Every year thousands of people and companies are subject to phishing attacks, the most common cyber crime. Phishing is a type of social engineering attack where an attacker tricks someone into performing some sort of harmful action, for example giving money to the attacker or giving the attacker control of the victim's computer. To trick the victim the attacker often poses as some sort of authority figure and creates a sense of urgency for the victim. Phishing attacks can be hard to prevent as they exploit human traits. Some phishing attacks sent via email can be automatically found and dealt with and there are a lot of different ways to distinguish legitimate sites from spoofed ones but in the end it comes down to the user to decide who to trust.

In order to tackle this, many choose to educate their employees on security threats. This is done through e.g. awareness campaigns, educational elements such as videos, quizzes or lectures and aims to increase their awareness. This is done not only to inform, but to ensure that the employees or citizens understand the importance of their role to mitigate some security threats.

During the Covid-19 pandemic governments all over the world tried to inform their citizens on how to decrease the spread of the pandemic as best as possible. In many countries this was done using informational posters where citizens were reminded to keep their distance, wash their hands etc. This awareness campaign sparked an interest to use a similar concept in relation to security awareness. In this thesis we try to combine the interaction design aspects of the Covid-19 campaign and the need for reminding security awareness for the individual.

To do so, a survey was created to better understand the current situation. The surveys showed a broad use of some for of security education, but a need for following up or reminding about the education - a perfect opportunity for using posters. The survey also resulted in a couple of requirements to fall back to while producing a poster ranked by importance. These were: using a simple and straight forward design, ensure an eye-catching effect, make it apparent who made the poster and ensure that you can find more information on the subject.

With this in mind, a couple of sketches of posters were made to put the requirements in a tangible situation. These sketches were evaluated with an over all positive feedback, but was concluded to need a bit more context. Therefore, digital versions of the sketches were created. The digital versions



Figure 1: Poster 4, the highest rated one.

contained more concrete security information and had a more extensive and finalised design. These digital versions were later printed into real posters and evaluated using known usability evaluation methods such as the System Usability Scale (SUS), as well as tested for the eye-catching effect of the different alternatives. In addition, interviews were included to deepen the understanding of the test participants points of view. The evaluation concluded that in order to produce a good security awareness poster you need to have a clear information flow by using signifying elements in combination with simple and straight forward information about the subject.