Designing for privacy and security enhanced user experience

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Abstract. Any technological advancements will require one or more systems to adapt itself to support it. Such adaptations must be performed with care such that the usability and user experience delivered by the system is not disrupted. Recent advancement in payments methods is the NFC (Near Field Communication) payments popularly known as contactless payments [1].In this paper, we explore the usability and user experience aspects of NFC payments.

Our user studies [2][3] portray that NFC payments fail to provide users with appropriate user experience as users feel less secured and privacy breached while paying with NFC in supermarkets, compared to other payment methods. Based on the user studies conducted, we redesigned the existing payment terminals used in supermarkets. We improved 4 factors of the payment terminal namely the audio feedback, visual feedback, haptic feedback and the screen design of the payment terminals. Each factor was designed and tested for its effect on the privacy and security related experience gained by the user. The factors which delivered users with maximum privacy and security enhanced experience were combined to develop a new payment terminal. The redesigned payments terminal was then evaluated with potential users. The evaluation results portrayed us that the redesigned payment terminals deliver users with a secured and privacy-enhanced experience compared to the existing payment terminals. The redesigned payment terminal was also designed considering the differently abled customer. To verify the universal design of the redesigned payment terminal, we conducted the above-mentioned evaluation with visual and hearing impaired participants also. This evaluation result was also positive stating that the redesigned payment terminal was better than the existing payment terminal.

We also framed 6 guidelines based on our experience in improving the privacy and security related experience of NFC payments. These guidelines will aid designers while designing or redesigning any system.

Keywords: Privacy and security experience, User experience, NFC payments, Guidelines

1   Reference

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