An Open Interactive Survey Platform to Collect and Analyse Users' Privacy Decisions in Pervasive Computing Environments

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Abstract—One of the critical barriers of applying pervasive computing technologies to real-world environments is the privacy risk of transmitting and sharing personal information of users across computing entities. Several studies have collected and analysed users' privacy concerns in PCE, but most suggest only privacy policy models which do not consider the actual PCE. Moreover, there is no relationship between these works and ongoing research, as there is no common survey model that can verify a given privacy policy using the actual privacy decisions of users. In this paper, we propose an open interactive survey platform (OISP) that provides a virtual PCE. Through this survey platform, we can obtain users' actual privacy decisions and open the results. The method is simple and reusable because a survey scenario can be based on a video clip from a third party and shared with other researchers. In addition, a privacy model can be verified by comparing it with other models through the results of previous surveys. In this paper, we describe the architecture and flows of the proposed survey platform and show that the proposed survey is 28% better at reflecting users' privacy decisions than the existing paper-based survey method.

Keywords—pervasive computing environment; privacy; interactive survey.

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