Value Sensitive Analysis of a Persuasive System for Breastfeeding

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Abstract. Although the obvious iniquities, namely coercion, deception, and manipulation, are not part of persuasive technology philosophy, the developers have to deal with ethical challenges when designing persuasive systems. To study how potential ethical issues could be dealt with already during the design process, we took a closer look to a persuasive system with highly sensitive topic. We conducted both persuasive system design analysis and value sensitive analysis to comprehend the system and the contextual issues related to it. Our study revealed, that value sensitive analysis can benefit persuasive system design process by providing new and valuable information for the designers. In the end, the new information can help making the system more ethical, but also more valuable and thus persuasive for the users.

Keywords: Value sensitive analysis, Ethical analysis, Persuasive systems

1 Introduction

Ethical questions often arise when developing persuasive systems [1]. Depending on the case, the issues faced with can vary remarkably and no single means exists to resolve all possible issues in an easy manner [2]. Persuasive Systems Design (PSD) model [1] has been created to help designing persuasive systems, but it only provides partial support for analyzing ethical issues. In our study, we investigated whether Value Sensitive Analysis [3] used together with PSD model could help better address the ethical issues. More specifically, we were interested in what kind of information stakeholder and value identification could provide, and how they could benefit persuasive system design. A longer version of this study can be found in [4].

2 The case

We utilized a mobile application called Milky Way to study the research problem. The Milky Way application was developed by University of Wollongong’s researchers. The application was designed based on lessons learned in a research project, whose goal was to educate and support mothers with breastfeeding from early pregnancy to postpartum period. In the project, the breastfeeding information was given in the form of face to face educational sessions before and follow-up support telephone consultations after giving birth [5]. The Milky Way Program increased the likelihood
of breastfeed [5]. The application was developed in order to test whether a mobile application is a feasible mean to deliver such program successfully.

3 Analyses

First, we conducted a PSD analysis to form a detailed picture of the Milky Way application. As a result, we had a clear picture of the intent, the event, and the strategy of the application, as well as a list of persuasive software features utilized in the Milky Way.

The VSA produced a list of relevant stakeholders. In addition to the obvious, such as the women with intent to breastfeed as end users, the VSA produced a list of other relevant stakeholders, such as numerous health care advocates and university personnel (see more from [4]). Naturally, the importance of different stakeholders varied. VSA also produced a list of relevant values together with explanations in the context.

4 Conclusion

The VSA produced relevant and useful information for persuasive system design. By identifying the relevant values of the identified stakeholders, the persuasive systems will be potentially more ethical, since some of the ethical problems can be resolved during the design phase. In addition, the found values can be utilized as guidelines for the system design.

References