Tools for Family Organisation. An Example for Values in Design.

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Abstract
Family management is crucial for working couples with small children. We report on a graduate teaching and research project that aimed at elicitating requirements and producing design concepts for a software tool for family management. At various stages and levels of the project values of designers, users or society in general come into play.

Author Keywords
family management tools; values; gender & diversity; reflective design

Introduction
As part of a graduate teaching and research project in computer science (Informatik), we had a group of students inquire into the daily practices of child care organisation in families. The aim was to solicit requirements for technology that supports the organisation of 24/7 child care by the parents themselves and others.

During the course of our project we discussed values in the context of family management, child care and work-life balance as well as the impact of software on social systems with the students. We take this workshop paper as an opportunity to reflect more explicitly on value issues related to our general approach to systems design.

Aspects that we find are related to values are, e.g., choosing an area for technology support, choosing the users to be involved, assessing users' current practices, and deciding between alternative concepts for design solutions. In the following we describe how we approached values in regard to these aspects.

Choosing an area for technology support

Our work group Socio-Technical Systems Design & Gender deliberaty focuses on types of work or activities that commonly do not receive as much attention as other fields. We look out for „invisible work", often denoting occupations that are largely concerned with caring, emotion work, service work, communication, and the „articulation work" (Star & Strauss 1999) that enables cooperation. These types of work are often considered „women's work".

In this case we chose „technology that supports parents who coordinate child-care" as a topic for our teaching project. We approached the project with the idea that family work tends to be organised and done mainly by mothers and that the sharing of family work among working parents is a positive value we wanted to be supported and represented by the technology. Our empirical investigations were focused on parents who were both employed (or both students), because their need to organise child care is much greater than in families where only one partner goes out for work and the other one stays at home.

Choosing users to be involved

Attention to diversity not only helps to choose an area to be studied but also to select the people to be involved in the empirical research. The focus of participatory design and user-centered design is on the intended users of a system that is to be re/designed. Planning the requirements elicitation and systems design we have to decide: *who are* the users that should participate and *how* should they participate? Decisions in both cases are influenced consciously or unconsciously by the designers' values and assumptions.

Our approach is to first gain an understanding of the social and economic structures of the application field, of the work, people and relations that are concerned. Insights about the diversity of people can help to decide who should be involved. We – again – look for positions, tasks and roles that otherwise might be overlooked. Often this draws our attention to „women's" tasks and positions.

In our case, and from a gender & diversity perspective, we wanted to be careful not to (re)affirm gender stereotypes. Therefore we decided to interview *both* parents in all 11 families we studied, where possible. Had we asked only the mothers we would have constructed the very situation we expected to find (approaching the mother as the primary organiser) and we might have produced a biased empirical outcome. Moreover it was appropriate to interview both partners who were potentially involved in family coordination activities since both were the prospective users of the technology.

Regarding the type of participation we decided that the users should be informants and testers. The quality of the users' participation is always a value issue. Usually we consider the cooperation with users as partners in design as the most desirable type of participation and at best in accordance with our values as designers. If

users do not partake as design partners, this decision has at least to be reflected as a value issue. In our case the decision not to co-design with the users was mainly due to the limited amount of time they were able or willing to spend.

„... I put a lot on paper notes, and then it is me who has everything and has to distribute the work to the others, which I find annoying. It would be better if every member of the family looked for her- or himself, took up a chore and then marked it as done." (T9, p.1)

During the interview one of the three sons came in and asked his mother, whether he would be available at a certain time for an appointment. She asked him to check the family calendar himself, but he refused: ‚No, you tell me!' (T6, p.5)

Respecting values of the users we design for

Elicitating requirements in the case at hand we did not ask explicitly for the values guiding their family organisation practices. Our empirical research showed the tendency that only one parent, mostly the mother, was the primary organiser of family-related tasks and events. Even in families where both parents *wanted* to share responsibilities for coordination, often one person took over a larger share. Sometimes we witnessed an explicit wish to redistribute responsibility as the quotes illustrate (see margin).

Encouraging an equal distribution of responsibilities among parents and furthering children's independence can be seen as values to be respected or ignored when designing technology for families. Respecting the users' values does not necessarily mean that design should strictly follow their values. There may be conflicting values among the users or among different stakeholders and we may also have to confront these values with our own values as designers and with general values in society.

Design decisions follow values

Comparing our design ideas for supporting family organisation with design decisions of other researchers of the topic, we see a good example of how decisions may differ as a consequence of the underlying values.

Neustaedter et al. (2009) conducted a research project on the use of family calendars. They observed that in most cases the family organisation was centered on the interviewed mothers as „primary schedulers". The mothers usually gathered information concerning family-related tasks and appointments, entered it into a calendar, some quite adamant about nobody else being allowed to write on it. They consulted this calendar most regularly and told the other family members, including their partners, what had to be done and when.

Neustaedter et al. conclude that a technology devised for families should support a system with one central organiser. They explicitly reject the idea of implementing „negotiation protocols" as were suggested by Crabtree et al. (2003). "By 'negotiation protocols' we refer, then, to computer-mediated methods of interaction and communication that allow the users who own and share the calendar to make one another aware of and respond to data transactions" (ibid., 133). Such protocols could help the users negotiate dates and attendances and by implication help negotiate *who* is responsible for a certain event or action. Neustaedter et al. assume that most of the families they studied would not use negotiation features and that such features might unnecessarily complicate task completion and increase the effort of scheduling. They continue:

„Even worse, event negotiation features could force a family into thinking this is how they *should* approach family calendaring, regardless of whether it works for their routines or not. For this reason, we suggest *designs should not support negotiation protocols*, since they are based on workplace calendaring routines and

not family ones.“ (Neustaedter et al. 2009, 6:36, original emphasis)

We would phrase the value underlying this decision as: an envisioned socio-technical system should mirror the current system as closely as possible and technology should support current practices. In a way, this is an important value in user-centered design: new technology should be compatible with the current socio-technical system it is being designed for. Nevertheless, we adhere to „reflective design“ and designing for change as important values.

Reflective design and design for change

Sengers et al. (2005) introduced the term „reflective design“. They conceive the process of designing technology as a reflective practice. Moreover they envision technology designed to encourage users to reflect on their own practices:

„Designers should support users in reflecting on their lives. The central aim of the critical project is to enhance human freedom by supporting critical reflection. Technology designers can play a strong role in this project by offering users new ways of experiencing and reflecting on their activities.“ (Sengers et al. 2005, 55)

Relating this to the issue of re/distribution of family-related work and on the basis of our values we would suggest to design a system that *allows* for various forms of family organisation. Negotiation features would offer the option for a change in routines in case family members want to change how they organise family work. At least the option to use them should not be precluded because that would enforce the continuation of a particular division of work. Such features might even function in the sense of „reflective design“, encouraging families to reconsider their arrangements or to experiment with features that help to shift the existing division of labor.

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