Feminist Interventions in the Design Process

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In this paper, I will first discuss what a feminist design of Information and Communication Technologies (ICTs) could look like. Is it enough to design products that include more women, or should feminist designs include efforts to provide for changes in gender relations? Subsequently, I will present results of an analysis of the design of, for instance, computer games, websites and mobile phones by eleven enterprises carried out as part of the large scale EU Strategies of Inclusion; Gender in the Information Society (SIGIS) research. All of these companies attempted to design in a gender inclusive way. I will discuss how the companies studied actually took gender into account: through designing from stereotypes, with the (reflexive) I methodology or through participatory design. I will discuss the pros and cons of each of these method ologies and conclude with some ideas on which interventions might be most effective in creating gender sensitive or even 'feminist' products.

In a large scale European research project called Strategies of Inclusion; Gender in the Information Society (SIGIS), we studied a large number of Eu ropean companies and organizations that designed ICTs either explicitly 'for everybody (including women)' or particularly 'for women'.[1] As we were in terested in inclusion of gender in the information society, we investigated the ways in which designers tried to design in an inclusive way. But what is it we

1 | In alphabetical surname order the 'we' are: Wendy Faulkner, Leopoldina Fortunati, Helen J. Gansmo, Deirdre Hynes, Aphra Kerr, Tine Kleif, Vivian A. Lagesen, Lisa Lee, Roberto A. de Luca, Carol MacKeogh, Anna Maria Mangelli, Hege Nordli, Barbara O'Connor, Ellen van Oost, Nelly Oudshoorn, Paschal Preston, Els Rommes, Marcelle Stienstra, Kristin H. Spilker, Irma van Slooten, James Stewart, Knut H. Sørensen, and Robin Williams.

actually mean with gender inclusive design? And are there design methodologies which will more easily lead to gender inclusive products than others? These questions will be addressed in this chapter.

Several researchers of gender and ICTs have been critical about the 'normal' design of ICTs. One of the main points of criticism has been that designers design for the masculine norm (Oudshoorn et al., 2004; Wajcman, 2004; Webster, 1995). Hardware and software intended 'for everybody' were analyzed to investigate whether they indeed fitted the lives of 'everybody', or were in some ways more accessible to some groups (e.g. highly educated, middle class, self confident, able bodied, heterosexual white young men) than to others.

One way of analyzing the genderedness of ICTs employs the 'levels' or dimensions (structural, identity, and symbolic) in which society is gendered according to Sandra Harding as a systematic way of studying ICTs (Harding, 1986). In the structural dimension, questions are asked like who has access to the product? Which resources (e.g. financial, social networks) are needed to have or use the product? As Susan Leigh Star would say: question who is excluded and "cui bono?", who profits (Star, 1991: 43). Analyzing this dimension in a product means comparing features of the product with statistical knowledge on who is located where in society and who has access to which resources, such as social, economic or cultural capital (Bourdieu, 1984). In the identity dimension of gender, questions can be asked such as which skills and knowledge, which physical attributes, and which learning method should a user have to use the product? To analyze this dimension in the product, individuals with diverse preferences and skills can for instance be interviewed and observed while using the product, to see how well it matches their personal preferences and skills. In the symbolic dimension, questions can be asked like which aims and values (e.g. do products mostly have economic, virtuosity or user/need values which, according to Pacey, are the main values technologies can have (Pacey, 1983)) the product represents, whose metaphors are used, with which symbolic means the product is marketed, and which stereotypes are reproduced. To analyze this dimension, a critical feminist analysis of the product can be made to clarify which stereotypes and feminine and masculine connoted symbols it incorporates.

Analyzing a product with the help of these specific three dimensions of gender is just one shape a multi dimensional gender analysis can take. There are other ways of interpreting the three dimensions of Harding, as there are other distinctions between levels of gender in society, such as those offered by Scott and by Hagemann White (see Tonkens, 1998). The four 'inclusion

needs': access, motivation, capability, and various kinds of support we dis tinguished in our analysis of the case studies in SIGIS offer a similar kind of multi dimensional analytical tool (Sørensen et al., 2011, chapter 3). Each of these multi dimensional understandings of gender aims to offer a toolbox to give more encompassing insight into whose world is represented in a product. If this fits with the world of more men than women, a product can be regarded as designed for the 'masculine norm', it is gender specific, even if it is sup posed to be a 'gender neutral' or 'for everybody' product. In a similar way, other axes of inequality in society, such as class, age or cultural background can be analyzed, though which dimension is most important for (re)producing inequalities will be different depending on which social inequality category is chosen (see Verloo, 2006).

The point of this kind of research has rarely been to say that products which represent the world, including skills, preferences and metaphors, in which more men than women feel at home in present western society, ex clude all women. Women more often than not have resources, skills, and in terests which are associated with masculinity in society. More importantly, as researchers from the domestication approach have amply shown, users have considerable freedom to adjust the product to their liking and thus reconfigure intended practices and meanings of it (Berker et al., 2006; Oudshoorn and Pinch, 2005), although this freedom may again be unevenly distributed in so ciety. It is the intention of these kinds of studies, however, to say that it may be much harder, frustrating, and less interesting to use for people whose world is not represented in the product, and that some need to perform more 'inclusion work' than others.

In the following sections, I will first specify differences (and common alities) between gender sensitive and feminist products. Subsequently, I will describe the main design methodologies found in previous research by compa nies who attempted to design while taking gender into account. I will conclude this chapter with some speculations about what kind of relations might exist between these design methodologies and the kinds of products they produce.

Gender-inclusive or Feminist Products?

Whereas designs in which no particular attention is paid to gender easily run the risk of being in several ways gender specific and more directed towards men (Cassell and Jenkins, 1998; Wajcman, 2010), products in which specific

attention is paid to be 'gender sensitive' run the risk of being gender specific and directed towards 'women' or 'the feminine'.[2] This is what happened in several cases in the past in which, for example, attempts were made to develop a 'game for girls' (Jenkins and Cassel, 2008). Although this might be a way to (re)value the feminine and to offer a wider diversity of products in society, gender specific products may be problematic for the reasons mentioned above: requiring more inclusion work for some than for others. In itself, this is not such a big problem, as long as it is clear that it is a targeted product, rather than a product 'for all'.

There is, however, a bigger problem related to gender specific products, as they may reinforce sex stereotypes (see Rommes et al., 2010). The rein forcement of sex stereotypes is particularly salient if products are gendered in the symbolic dimension. Products which signify, for instance, with their colours, in their description, in the pictures of prospective users on the pack aging or in the way they are marketed that they are specifically aimed at one of the two sexes, reinforce stereotypes of what men or women are supposed to be, prefer, know, and are capable of. Indeed, a toy producing company in Sweden was asked by elementary school children and a marketing watchdog ombudsman to change their catalogue to present less sex stereotyped pictures of their prospective product users.[3] By changing these images, i.e. their gender specificity in the symbolic dimension, gender transgressive, or transforming products may have now been created: products which contain contradictory gender signifiers on one or all gender dimensions. Whether these product (im ages) will indeed have gender transgressive effects in society, for example in changing toy preferences in children and changing gender stereotypes in soci ety, remains an empirical question.

An important point of criticism of studies on the extent to which products are gendered or even gender stereotypical, is that they pay too little attention to transformations of gender. Although these studies claim to have a 'co con struction' perspective on gender and ICTs, closer analysis reveals that what is mostly analyzed is technology, and gender remains remarkably stable (Lag esen, 2005; Landström, 2007). Gender is regarded as static or even a statistical

2 | In theory, gender signifies men/masculinity and women/femininity, in practice, how ever, 'gender sticks more easily to women' (Berg), meaning that if particular attention is paid to 'gender' this is often understood as attention to women.

3 | See http://www.dw.de/neither good girls nor boys in sweden this year/a 16436045 (ac cessed 17 February 2013).

variable, and even in the symbolic dimension it is regarded as dichotomous and again stable. Various studies have accommodated these kinds of criticisms by focusing on the ways in which products themselves influence individual gender identities or performances of their users (see for instance Corneliussen, forthcoming, chapter 5; Lagesen, 2012; Lohan, 2001; Sørensen et al., 2011, chapter 5). It is, however, probably no coincidence that the dynamic character of gender in these studies is mostly located in the individual identity dimension of gender. Which kinds of performances and which kinds of research on these performances may show that gender is dynamic in the symbolic dimension and which of these evoke transformations in this and the structural dimension?

Moreover, these studies mostly focus on how gender is dynamic and open for transformations in people, or more often, in socio technical assemblages or cyborgs. Can gender as something dynamic and fluid also be studied as such in products? Are some products more capable of evoking transformations in gen der than others? This is a question not on how technologies can accommodate diversities in users, but rather a question of how technologies can contribute to the transformation of gender in society. Hence, it seems more appropriate to use the term feminist rather than gender sensitive for these kinds of products. These products could for example be technologies of which signifiers (color, material, costs, required skills) at different dimensions point in various direc tions and/or products which contain counter stereotypical images or stories.

In the SIGIS research, we found some examples of products with the po tential of being gender transgressive. Some Norwegian game designers, for instance, designed games that combined role playing and nice packaging, be lieved to be important to women, with action elements, believed to be impor tant to men. In our analysis of women's web magazines (Sørensen et al., 2011, chapter 4), websites were studied which were both 'technological' and at the same time were created as 'places for women'. These websites transmitted the message that women can simultaneously be computer competent and 'femi nine' in a traditional way. The image of women and femininities as including computer competence was constructed alongside more conventional percep tions of traditional femininities. They also challenged or loosened gender bi naries of women as being only interested in serious/functional use as opposed to men being geared towards fun and pleasure use, and binaries of women as connected with the private realm versus men as associated with the public area of Internet discussion forums. Arguably, these websites helped to reconstitute the Internet from a very masculine area (Hafner and Matthew, 1996) to the mixed place it is considered to be nowadays.

How can such gender transgressive, feminist products be conceived? And how should products be designed which aim to reach a diverse audience, or which even intentionally want to include more women as users without pro ducing gender stereotypical products? To answer these questions, I will now present some of the findings of the design methodologies we found in the SIGIS project: which design methodologies did these companies that tried to design 'for everybody' or even 'specifically for women' employ? The follow ing is a summary of the findings we[4] present more fully in Sørensen et al. (2011), chapter 6.

Gender-sensitive Design Methodologies in Practice

When designers make a new product or remake an existing one, they construct a script: "Technical objects define actors, the space in which they move, and ways in which they interact." (Akrich, 1992: 216) If this definition of actors, or the division of responsibilities between actors and the spaces in which the ob ject is supposed to act, is in any way gendered, we call this a 'gender script'. In constructing this script, designers draw on some representation of the intended users, on images of the presumed target group. This may happen more or less consciously, but one cannot really design a product without some idea about how it is going to be used, by whom, and for what purpose (Akrich, 1995). In the eleven companies we studied, we observed three main practices with respect to the construction of user representations, each with different implica tions for the way gender issues were approached:

- Designing from gender stereotypes.
- I methodology, where designers see themselves as typical users, and the reflexive I methodology, where companies deliberately chose to involve women designers.
- Participatory design, where potential users were directly involved in the design process.

4 | In this section I will use the 'we' form, as this part was written together with Wendy Faulkner and Knut Sørensen and based on the collective work of the participants in the SIGIS project.

In the following, we describe and discuss these practices in greater detail. In several companies, more than one of these approaches have been used in the same project.

Designing from Stereotypes

In the companies we studied, it was clear that many designers who aimed to include women as end users of their products saw it as important to define in what ways women or girls 'are' different from men or boys. Many were convinced, for example, that some features just 'belong' to women's or girls' products 'like fashion and beauty' as we saw in several of the designs for web magazines. How are such stereotypes chosen and invoked?

In some projects, the designers started with a literature study on gender differences, using books and reports that have in fact been extensively criti cized by feminists for the way they dichotomize and naturalize perceived 'bio logical' differences between men and women. In most of our studies, however, we found a more impressionistic approach. Designers looked at other 'typical' girls' products like girls' magazines, girls' books, or girls' favourite television programmes to get an impression of what girls and women would like.

Regardless of the source, the most common way of constructing an image of potential girl or woman users of a product was by thinking from stereotypes. To some extent, this reflected a felt need to construct an image of their future users as 'different' from the audience they had targeted before. Hence, no mat ter who actually were thought to be the precise target group adult women or girls, highly educated women or women living in disadvantaged areas the same general beliefs about what women want tended to resurface. Women were represented as neither interested nor skilled in technology and as prefer ring 'user friendly' (i.e. simplified) interfaces. Another widespread perception was that women were not into technology for fun but to gain from useful ap plications, without flashy pictures and such like. Contrary to our findings about the importance of having fun with computers and the Internet, it was widely presumed that women saw technology mainly as a tool.

In nearly all the companies we studied, such stereotypical ideas about how women 'are' or what they 'like', were important in guiding design decisions, if not exclusively so. Arguably, there is a positive and a negative side to de signers' interest in how girls 'are' different from boys. On the positive side, a focus on 'what girls want' may serve to strengthen and give value to skills and preferences considered feminine (Cassell and Jenkins, 1998) and it is a way

of creating a wider diversity of (gender specific) products with different target audiences. On the more negative side, by developing a product based on 'typi cal girls' interests', designers run the risk of reinforcing and re inscribing per ceived gender differences rather than challenging gender inequalities through efforts at transforming gender as a normative (social) construction. In other words, the stereotype approach may easily give rise to the design of products that are specific, e.g. pink websites with utilitarian aims focusing solely on top ics presumed to be of interest to women, or even worse, gender stereotypical, if such sites are explicitly addressed to women (see Rommes et al., 2010, for the different ways in which games can reinforce and re inscribe gender ste reotypes). Gender specific and especially stereotypical games may reinforce traditional gender practices and divisions of tasks (Corneliussen and Rettberg, 2008; Henning et al., 2009; Jenkins and Cassel, 2008; Kafai et al., 2009; Tay lor, 2006). Moreover, such designs run the risk of not being commercially viable, as we found in several companies. Designing from stereotypes should, at the very least, be considered a potentially risky business.

The (Reflexive) I-methodology

One of the most commonly used design techniques in ICTs is to make de sign decisions on the basis of designers' own preferences. This is frequent ly referred to as the 'I methodology', emphasizing the subjective aspect of formulating user requirements (Akrich, 1995; European Commission, 1998; Oudshoorn et al., 2004). The I methodology has been considered problematic in the context of gender inclusive design because most designers are men. Designers also tend to have a specific, 'insider' relationship with their technol ogy, which makes their world view different from that of many users of their product (Rommes, 2002). Hence, this design methodology may easily give rise to gender specific products targeting more men.

In most of the eleven companies we studied, some form of I methodology was practiced. However, the concern for gender inclusion made several com panies use what we consider to be an adapted version of the I methodology by explicitly making choices with respect to the sex composition of design teams or by stating up front that women ought to know what women want and need. This, we call reflexive I methodology. What kind of design practices did this refer to?

In feminist methodology, Donna Haraway (1988) has called for reflexive approaches to science and engineering, noting that such work needs to be situ

ated to be made understandable and that all perspectives are partial. Clearly, by adhering to these tenets, the I methodology may be used in a reflexive way. This requires that designers be aware of and take into account the ways in which their particular perspectives and situation make them similar to and different from the end users of their products. Of course, relying on stereo types is one way of dealing with the situatedness of designers in so much as it acknowledges that they are different from the intended users. However, to qualify as reflexive I methodology, designers need to pursue in much more depth the thinking and reflection about their roles.

What we observed in many of the companies we studied was anything but such an in depth reflexive approach. Instead, women were asked to join the design team to help create a product aimed at women. In all of these instances, it was assumed that women are necessarily similar to their target audiences of girls or women, and understand these potential users better than men designers would. In effect, they used the reflexive I methodology in an essentialist way. This said, even where women were involved positively in the design, their influence was often limited. Hence, if women are introduced in the design pro cess as a way of introducing a reflexive I methodology, their position within the organizational hierarchy and the division of labour will have a major bear ing on how much they are able to influence the ultimate design.

There remains the problematic issue of the implied essentialism in this version of the reflexive I methodology, the belief that every woman is repre sentative of women (or girls) in general. As indicated in the discussion about the I methodology, even in cases where women designers are similar to the potential users for instance, in terms of age, class, ethnicity, and interests the mere fact that they are part of a design team, have access to the latest technology, and are interested and skilled in the use of technology, makes their relation with technology different than that of most users. So, both versions of the I methodology need to be used with care. Moreover, because of the es sentialist tendency inherent in the observed use of reflexive I methodology, it is likely to lead to gender traditional products, as some of the developed web magazines and computer games we studied exemplify. This danger could be avoided if designers' reflexivity were based on efforts to find out about the complexity and diversity of actual people, their practices, identities, and the like, rather than on essentialist assumptions. One way of doing this is to access expert knowledge about gender, so that design teams can learn from previous research on the subject, and use this knowledge to identify relevant consider ations and refine their own understandings. Another way to find out what girl

and women end users want is to engage in participatory and interactive design techniques, to which we now turn.

User Testing and Participatory Design

As we have seen, both the stereotype approach and the reflexive I methodology in the form of deliberately employing women designers assume that there are differences between men and women and, consequently, risk reproducing these differences through the design of quite gender traditional and stereotypical products. Arguably, the most important alternative is the use of techniques such as the testing of products on potential users or participatory design. These techniques which have sometimes been called 'feminist' strategies (Balka, 2005; Cassell, 1998; Greenbaum, 1991; Suchman, 1991) allow potential end users some direct influence upon design, with the result that design does not rely solely on the ideas and beliefs of designers.

Several of the companies we studied invested time and energy in identifying representative end users and examining their preferences. Such user involvement in the design process seems to be the exception rather than the rule (European Commission, 1998; Haddon and Paul, 1999; Offenbeek and Koopman, 1996). Involvement of potential users in early phases of the design process is especially rare.[5] In this context, it is interesting to note the fairly widespread use of testing and some kind of user participation in the companies we have been studying in various phases in the design process. This suggests that concerns to include more girls or women result in greater than normal engagement with potential users possibly because of unfamiliarity with the target group. In addition, it seems clear that the Internet facilitates interaction with users and user input to design, which helped the companies we studied. New ways of user testing and getting feedback on designs have become available.

Although the interactive features of ICTs seem to be very effective in allowing users more influence, those users that give feedback in this way are a select group: more active, engaged, and articulate than ordinary users. By focusing solely on their needs and wishes, designers run the risk of ignoring those users who are less capable of articulating their demands, or of ignoring

5 | It is so exceptional that several authors have developed design methodologies that they consider to be innovative because of the early phases and the extent to which they involve potential users (see e.g. Fullerton et al., 2006; and Mackay et al., 2000).

potential users that are not yet using the product. This is a general problem with respect to participatory design strategies: how to achieve a reasonable degree of representativeness? The companies we studied could perhaps have been more concerned about these limitations. Again, the challenge is to find out about the multitude of actual and potential users, to become more sensitive to the diversity of wishes, skills, and preferences, which could enable their designs to include a wider range of users, in other words, to be more gender sensitive.

Which Design Methodologies Lead to Gender-sensitive Products?

After having looked at which design methodologies are most common for companies that seek to design products taking gender into account, the ques tion now is what can be said about the outcome of these products. It seems safe to assume that explicit user representation techniques will more easily lead to gender sensitive products, as producers of these products will have a more nuanced and diversified image of what their target group is interested in and prefers. And whereas the I methodology might give rise to gender specific products, the reflexive I methodology might at least create some awareness of this amongst the designers.

Nevertheless, it is not easy to predict to which kind of product a specific design methodology will lead. Although it seems logical to assume that the stereotype approach will more easily lead to gender specific or even stereo typical products, this is not necessarily the case. If designers (un)intentionally only change some aspects of their products, like some of the companies we studied as part of our SIGIS study, the result could just as easily be feminist products that transform or transgress gender. In several cases, stereotypically feminine elements were used to attract both girls and boys: for example, de signers would make a slightly pink product, incorporating several interests which they considered to be 'typically feminine', which they intended to mar ket to both girls and boys. Similarly, the web magazines which we discussed earlier were partially made with the design from a stereotypes approach, while they also represented masculine connoted interests and values like being inter ested in cars and in ICTs.

In a previous research on the development of games for children (Rommes et al., 2010), we did find that the 'feminist values' of those that are in charge of

designing products may affect the extent to which products are gender sensi tive or even gender transgressive, as Jenkins and Cassel (2008) also tentatively concluded. Those designers that believed that products could influence gender identity and behavior of, in this study, children, and who wanted children to behave less gender stereotypically, consciously chose to design more gender inclusive or even transgressive products. As to how interventions in the val ues of designers can best take place, more research is needed, but some sug gestions could be derived from work by Allhutter (2012). The main element behind the interventions Allhutter and others using similar methodologies sug gested, is to make designers aware of their own feminist or other values and of the potential consequences of these values, in the hope that this will affect designers' choices.

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