

Participatory Design

by Margaret Benston

Le présent texte est le plus récent de Maggie. Il préconise la conception de technologie, comme les systèmes de communication informatisée, avec l'entière collaboration des utilisatrices et utilisateurs et en tenant compte du contexte social dans lequel la technologie sera utilisée. Les besoins des femmes sont différents de ceux des hommes. En outre, elles apprennent et comprennent cette technologie de façon différente.

Editorial Note: This paper was the last Maggie delivered. The paper was given in Seattle (March 31st to April 1st, 1990) at the Conference on Participatory Design, sponsored by The Computers in Workplace Project of the Computer Professionals for Social Responsibility, and first appeared in the published conference proceedings. It is reprinted here with permission.

Part I: Volunteer groups, learning and participatory design

One of the major problems faced in any participatory design project is creating an area of common discourse and shared knowledge. Technical people can't be effective resources unless they know at least something about the group that they are working with. Conversely, people in the user group can't make decisions without at least a rudimentary conceptual map of the terrain. For participatory design to function, the users must be able to choose between options, question declarations by technical people and, most importantly, raise questions and issues beyond the immediate ones presented by existing options or by the mindset of the technical resource people. For this to happen, space and time for learning by users must be an integral part of the design process.

The exact form that this learning takes

will vary from application to application but it probably should be some form of 'experiential' learning so that the material, so far as possible, is 'owned' by the participants in the process. It should also, so far as possible, be integrated into the design process—if one of the hallmarks of this whole approach is to break down the separation between design, implementation, and use, so too we need to break down the implied separation between learning and design.

The need for people to develop such a conceptual map, however, does imply that the process is not an easy or speedy one. I also believe that there is need for an initial period of basic learning, in most applications, before the interactive process can begin. In the case of computer communications systems, for example, there are major learning barriers to overcome in the initial stages—the software involved is multilevel, a wide range of infra-structure hardware is involved and understanding the physical and logical structure along with the actual differences in organization of information on different applications (e-mail, conferencing, bbs, etc.) is not always easy. In addition, the social organizations and networks implied by different options are not transparent.

Non-profit groups typically operate with little money and with enormous demands on staff and volunteers. One of the major problems in attempting to work with them in a participatory way lies in their members finding the time for an approach that at times simply seems another burden. It's hard for over-stretched people to be future-oriented enough to recognize that the time put in during early stages will be repaid later. My experience has been that there is a resistance to the need to learn enough even to begin the

design process. There is a strong tendency to want the expert to do it for them.

Since our point of view is that of technical resource people, it is easy to stress the learning process that the potential users must go through and forget how much we must learn ourselves. In much of the work that we've done with non-profit groups, we've also been acting as volunteers and there are many of the same pressures to short-circuit our half of the learning process. There is also perhaps a tendency to assume that we understand how the particular group functions. Teaching the resource people about the group also creates more responsibility for the users and further stretches their resources.

The result in several projects has been a real pressure on the part of users to be treated as clients and to have the experts simply take over and do the job. Although the net result looks much the same as the situation in conventional business system design, the reasons why this happens are quite different.

Part 2: Feminism and participatory design of computer communications systems

It seems to be the case that outside of work settings, women use computer communications systems much less than do men. This, at least in part, reflects gender differences in approaches to science, technology, and machines. Boys and men are expected to learn about machines, tools, and how things work. The male world includes cars and motorcycles, power tools, electronics, and computers. Girls and women are not expected to be interested in such things. Instead, they are expected to be good at interpersonal relationships and to focus on understanding people rather than things. Women are

by Non-Profit Groups

and Ellen Balka¹

excluded not just from an understanding of machines and tools, but also from access to the underlying technique and the physical principles by which machines and tools operate. This means that even when women use tools or machines, they are not the designers, creators or the maintainers of this equipment. Generally, they stand outside a world of technology considered to be male.

There are at least two main ways in which gender differences are manifested in regard to computer communications systems. First, men's and women's access to these systems differs—both in terms of physical access and in potential ways of learning about them. Second, gender differences in language and cognitive style may also influence relations with such systems.

Let us consider questions of learning first. If a man needs to learn something about a new technical area, he generally knows someone else (male) who has at least some expertise in that area and who can serve as a resource. This informal learning from peers is a key element in male culture. The situation is quite different for women. Because of gender socialization, there are few female peers who are knowledgeable about technical matters. In some (many?) cases, male hobbyists or lay experts turn out not to be particularly good resources for women. Men may not relate to women as equals around technology (it may be in quite subtle ways). It is sometimes hard for women to discuss technical issues with men—asking a question or raising a problem may be seen simply as further proof (as if any were needed) that women do not know what they are doing. Thus, the informal networks that support this kind of learning among men are generally missing for women. This means that in work-

ing with women's groups, the members may start out at a less knowledgeable or less confident level than do men.

Because of differences in cognitive style and language use, gender differences may also influence approaches to these systems. (Such differences are described by Spender in *Man-Made Language*, by Gilligan in *In Another Voice* and by Balenky, et al. in *Women's Ways of Knowing*). One style of discourse (largely associated with men) has been characterized in these works and in others as governed to a large extent by rules and 'facts', by abstraction and by attempts to achieve an ideal of 'scientific objectivity'. Another communication style (more generally associated with women) is more process centred, more focussed on the 'other' and on relationships. This discourse is directed to the resolution of conflicts between the world of facts and the world of emotion. It is the styles of objective, 'male' discourse, however, that are dominant in this culture. There is also evidence that the roles of men and women in conversation are quite different.

Very little research on gender differences in the use of computer-based communications systems has been done. There is, however, some indication that computer conferencing systems, for example, favour male styles of discourse more than female. Such systems are weighted heavily toward the formal presentation of ideas and the setting for those ideas is almost completely abstract. On the basis of informal sampling locally and on the few published reports, women's discourse seems to be away from the more abstract, formal interchanges of an organized computer conference and more toward the use of messaging systems. Such potential differences in cognitive style would be important to bring out in the participatory de-

sign process. Systems designed for use by feminist (or other community groups that put a high value on alternate styles of discourse) might want to support different kinds of interaction than do conferencing systems, for example.

A further, and very important problem, lies in attempting to embody the principles by which a group operates in the communication system. As Marilyn Asshton-Smith points out, in a report of attempts by her group to introduce electronic mail, feminists want to investigate ways in which communication can 'speak the truth', independent of the power or authority of the speaker. How can we exchange ideas, feelings, knowledge and opinions as well as make decisions within non-hierarchical organizations? How can we use communications processes, structures and technologies to foster that free flow of information and decision making?

In reporting on the first period of operation she asks "But is this neophyte communication system a feminist system? As feminists we are familiar with the ways in which communication can be closed and the way it is linked with the maintenance and exercise of power." She points out several problems which arose—among them 1) the fact that even though information was widely distributed, sometimes it was apparent that private communication underlay some of what was going on and 2) there was difficulty in following a discussion to a conclusion when a decision was called for.

One of the conclusions she draws is that:

patterns associated with other technology were the communicative patterns we tended to follow...they in fact work well on electronic mail and

it is a perfectly legitimate communicative form. There are patterns which are most effective if one person is making decisions and others are asked for their advice (as in a presidential form of government)... But to the extent that we are attempting to recreate the decision-making processes of a 'good' meeting, in which communication is fully open and all participate until there is a resolution of differences based on something other than power, we have much work to do. (Asshton-Smith)

It seems clear that the participatory design approach has much to offer in trying to accomplish these goals.

Part 3: Communication network structure

In our work, we have been concerned with the interaction of the technical dimensions of computer networking systems, and the social aspects of group interaction which occur in relation to a given computer networking system. Among the issues we have been concerned with are the relationship between network structure and the types of communication a given structure accommodates. After looking at several computer networking systems used explicitly for the purpose of feminist dialogue (as described by system users), we have come to the conclusion that as long as technical efficacy is primary, social goals are likely to go unfulfilled. Thus, in order to ensure that the social goals of a group are met, social goals should be considered as much as the goal of technical efficiency.

In discussing the design of computer networking systems, we are accustomed to thinking of the range of decisions related especially to hardware, as strictly technical decisions. However, social and technical choices are made during the design and implementation stages of com-

puter networks, which ultimately set some parameters in terms of the types of social interactions which can occur. In trying to understand how social choices interact with technical decisions to produce a computer network with certain strengths and weaknesses in relation to social goals, the analogy of a party is useful.

In comparing computer networks to a party, the place a party is held (for example a room or building, and the furniture in it) can be thought of as analogous to the physical structure of a computer network. The format of the party (e.g. cocktail party vs. dinner party vs. potluck brunch) as well as who the hostesses choose to invite can be viewed as social characteristics,



Reprinted with permission from the International Women's Tribune Centre

puter networks, which ultimately set some parameters in terms of the types of social interactions which can occur. In trying to understand how social choices interact with technical decisions to produce a computer network with certain strengths and weaknesses in relation to social goals, the analogy of a party is useful. In comparing computer networks to a party, the place a party is held (for example a room or building, and the furniture in it) can be thought of as analogous to the physical structure of a computer network. The format of the party (e.g. cocktail party vs. dinner party vs. potluck brunch) as well as who the hostesses choose to invite can be viewed as social characteristics,

If the room selected for a party has very formal furnishings, most guests will make some attempt to act appropriately formal. Similarly, if a party is held on a beach, a different mood is conveyed, and most guests will be inclined to dress and act more casually. In a similar fashion, decisions about what computer hardware and software are used for a network, and how the network is physically organized determine the types of communication possible, and set a stage for social interaction on computer networks. For any particular physical network structure, some things will be true, regardless of who the users are.

If users of a multi-node computer network (for example, Usenet) decide they want to exchange thoughts on women's issues, participants at each node must decide on a common node to coordinate the distribution of messages coming in from all nodes. In contrast, if users of a single node wide area network (for example, Peacenet) wanted to have a discussion about women's issues, they might begin by deciding whether to have their discussion via a mailing list (similar to multi-node systems), a bulletin board (similar to a single-node local system) or a conference.

When we throw parties, we make many social decisions: whom to invite, whether children are welcome, whether alcohol is served, whether events are determined by guests spontaneously or are orchestrated by the hostess and so on.

Similarly, within the limitations inherent to whatever physical network structure we have chosen, many explicitly social decisions must be made. For any communications act, we must decide whom to include, in some cases (a mailing list or computer conference) whether the information exchange is moderated or unmoderated, and, if it is moderated, what criteria the moderator should follow.

If our goal is simply to explore a set of issues with people who are geographi-

cally dispersed, and to have a place to receive feedback on thoughts, a multi-node mailing list, such as those available on Fidonet and Usenet, might be an appropriate solution. Or, if we want the potential to have structured discussions (computer conferences) between several people on specific issues, and to have access to resources such as databases containing bibliographies and mailing lists, we might choose a single-node commercial system. This is the type of service the founders of the Amazon Line Service (from Toronto) hoped to provide, and supporters of the Compuserve Information Service (a large network accessible worldwide, run on a for-profit basis on a computer in Ohio) Women's Section attempted to ensure.

If the main goal of our communication is to increase the information flow between individuals and/or organizations in a single city, a single-node computer bulletin board system might be most appropriate. The Women's Bulletin Board system in New York City attempts to serve this function for that city's women's community. Or, if encouraging daily communication between board members and committee members of a nationwide women's organization (many of whom have institutional access to computers) is our goal, we might set up a private multi-node mailing list. The Canadian Research Institute for the Advancement of Women (CRIAOW) has taken this approach to meet their short-term goals.

The use of Usenet newsgroups (as well as other distributed mailing lists with similar physical structures) provides an interesting case study from which one can argue for the need to accord equal importance to social goals and technical efficacy. Women began using Usenet newsgroups as a communications channel for the discussion of feminist issues in the early 1980s. The Usenet structure in part reflects the social values and goals of many programmers and hackers over the years. Usenet has been referred to as an administrationless volunteer-maintained computer network of information anarchists. (Marras, 1984) Virtually anyone with access to a computer that runs Unix and is identified as a Usenet node can gain access to a Usenet newsgroup, including several that deal with women's and/or feminist issues.

As most women who have participated in any of the Usenet newsgroups related to women's issues and feminism would probably argue, one of the most striking features of these groups is the extent to which the concept of feminism and the very notion of gender roles are a contested terrain. Put another way, while the groups were theoretically set up to accommodate discussion of women's and feminist issues, one of the most noticeable features of these groups is the extent to which just what constitutes feminism, as well as what constitutes the appropriate set of behaviours for both men and women, is continuously contested.

While it would be easy to argue that this sort of debate is not uncommon to discussions about women's issues and feminism, at the same time, the extent to which basic assumptions are debated is frequently commented upon by group participants (usually women). While there are undoubtedly many reasons for this, my intention here is not to come up with a definitive reason for why this debate exists, but rather to link this problem with the physical structure of the network, in order to make the point that social goals (in this case, of using Usenet newsgroups to discuss women's issues) occurred after technical decisions about the network structure, hardware, and software were made.

In the case of Usenet newsgroups, the structure of Usenet itself accommodates large, open groups with fluid membership. Because Usenet newsgroups are by default unmoderated (a social decision which is supported by the software), debates often rage out of control, causing many group participants to drop out of the groups, and causing other participants to question the extent to which the group's goals (of discussion feminist and women's issues) are being met.

While I suspect that no one involved in the design of Usenet ever intended the system to be used for the discussion of women's issues, at some point several people shared an assumption that given the availability of this technology, Usenet could be used to meet the social goals of discussing feminism and women's issues. And while the Usenet newsgroups dedicated to discussion of women's issues perform some function, it is, as many group participants debate, not clear that

the newsgroups fulfill the function for which they were intended.

While Usenet newsgroups dedicated to women's issues are perhaps an extreme case, the high level of dissatisfaction of group participants with debates which occur online perhaps indicate that the structure of Usenet is not well suited to the social goal of discussing women's issues. This mismatch helps illustrate the argument that when technical efficacy leads to the use of a computer system for specific social goals, those goals will often remain unfulfilled.

While it would be tempting to conclude that no one ever intended Usenet newsgroups to be used in the way participants have attempted to use them, it is also worth noting that deciding to use a computer system for a specific purpose, despite the fact that it was not designed to fulfill that social function, is a very common method through which groups adapt computer networking systems. If our intention is to improve the extent to which groups can meet social goals through the use of computer systems, we should conclude from the example of Usenet that social goals must be given equal consideration with technical efficacy in designing or selecting computer systems to meet specific social goals.

¹The first and second parts of this paper were prepared by Margaret Benston and refer to work done with Ellen Balka. The third part of this paper was prepared by Ellen Balka and refers to work done with Margaret Benston.

References

- Ashton-Smith, Marilyn. "Communicating: the Feminist and Electronic Mail." Canadian Research Association for the Advancement of Women Conference, 1988.