The PEN Project in Santa Monica: Interactive Communication, Equality, and Political Action

Everett M. Rogers
Department of Communication and Journalism, University of New Mexico, Albuquerque, NM 87131 1171

Lori Collins-Jarvis
Department of Communication, Rutgers University, New Brunswick, NJ 08903-5067

Joseph Schmitz
Department of Business Communication, University of Southern California, Los Angeles, CA 90089-1421

An electronic communication system, especially if it is designed to accommodate open access via public terminals can allow information-disadvantaged groups (such as the homeless, and women) to exchange relevant information and engage in political action. The Public Electronic Network (PEN), a free computer-based messaging system available to Santa Monica, CA residents, allowed homeless and “homed” individuals to meet around the issue of homelessness. These meetings eventually led to collaborative political action to enable homeless individuals to more effectively seek employment. PEN also allowed female residents to engage in political discussion, and to form a female users’ group to support female participation in the electronic networking system, and in the political community as a whole.

Introduction

The following joke was told at a 1989 Aspen Institute Conference, Online for Social Benefits, by Gary D. Bass, executive director of OMB Watch in Washington, DC, in order to illustrate the information-rich versus information-poor dimension of the new interactive communication technology systems (Aumente, 1990):

A man entered a Federal building on Constitution Avenue in Washington, D.C. to get government information. He approached two doors—one marked “with computer” and one “without computer.” He entered the one marked “with computer,” and confronted two more doors—one marked “income above $30,000” and the other “income below $30,000.” He selected the one marked for the income below $30,000—and found himself out on the street.

Our objective here is to investigate the socioeconomic and gender equality aspects of the public’s use of PEN (Public Electronic Network), a computer-based interactive communication system provided free to residents of Santa Monica, CA. When a new communication technology becomes available to members of the public, the earlier adopters are more likely to be male, and of higher socioeconomic status (Rogers, 1986). As a consequence, the new technology’s benefits accrue first to the higher-status males in a system, thus widening the “information gap,” so that those who are already information-rich get relatively richer. This general pattern of widening information gaps has occurred in recent decades for such communication technologies as cable television, VCRs, home computers, and videotext services (Dutton, Rogers, & Jun, 1987; Kominski, 1992; Rogers, 1986). Such widened information gaps based on socioeconomic status are especially likely to occur when the new communication technology is relatively expensive, and when the communication innovation is introduced in a context of free market forces (Markus, 1987).

Widening information gaps are not, however, inevitable. Consider, for example, the Public Electronic Networking system in Santa Monica, where:

(1) Some 33% of the 5,000 Santa Monica citizens who registered to use PEN in 1992 did not have access to
A strong commitment by PEN's designers to create a community-based networking system that was truly "democratic" allowed PEN to escape some of the limitations that characterize other systems (Aumente, 1990). A crucial decision made by PEN's designers (in 1988 when PEN was planned) was to provide the city's residents with free access to this system via public terminals or from private computers equipped with modems, located in homes and businesses. PEN can be accessed: (1) via home or office computers and modems; or (2) from 18 public terminals located in city libraries, senior citizens' centers, recreation centers, neighborhood support centers, and other public buildings.

By creating a system that could be accessed through publicly available technology, PEN's designers ensured that individual participation in PEN was not limited to computer owners. By creating a system with the capability of supporting interactive conferencing, PEN's designers also ensured that individual participation in PEN would not be limited to the unidirectional transmission or reception of information.

PEN's designers thus encouraged wide access to PEN, and facilitated adoption of the system by members of social groups (such as the homeless, the unemployed, and women) that usually do not have access to computers and modems (Dutton, Rogers, & Jun, 1987; Kominski, 1992). Because of this capacity for widespread participation, PEN served as a means for the exchange of diverse perspectives among men and women, as well as among individuals representing high and low socioeconomic groups. These perspectives were exchanged in interactive computer conferences that addressed pressing political issues such as homelessness and gender equity. In certain cases, the dialogue exchanged within these computer conferences led to the formation of political action groups and support networks that included individuals who had been disenfranchised from the political sphere. This diverse exchange of viewpoints and the subsequent formation of political action groups is unlikely to have occurred, other than through an electronic communication system like PEN.

Here, we explore:

1. How design elements promoting social and economic diversity were incorporated in the PEN system.
2. The impacts of the design of the PEN system on members of social groups (such as women and the homeless) that do not usually adopt information technology systems.
3. How the participation of these individuals in PEN facilitated more pluralistic political communication and political action.

The PEN System

When it was launched in February 1989, PEN was the first free-to-users, government-sponsored, interactive communication system of its kind in the United States. PEN was designed to meet six specific objectives by facilitating electronic communication among the residents of Santa Monica: (1) to provide access to public information; (2) to assist in the delivery of city services; (3) to provide additional forms of communication to residents; (4) to provide electronic forums that would increase the sense of community in Santa Monica; (5) to diffuse knowledge of, and access to, new communication technology among residents, in order to enhance their "computer literacy"; and (6) to provide a more equitable distribution of communication technology resources to the socioeconomically disadvantaged.

PEN consists of a donated Hewlett-Packard host computer, ports that connect users via telephone modem links, and computer software that provides services to users. PEN displays computer bulletin board information posted by city government officials, including extensive information about government and social services designed to meet residents' needs: housing referrals, employment assistance, recreation programs, legal services, housing shelters, and in-home services for the aged.

In addition to such "read-only" information, users can exchange electronic mail with other residents and with city officials. In 1993, PEN users could reach 40 city offices via the system, or join 20 different electronic conferences with other PEN users who shared interests in a specific topic. Examples include the Homeless Conference, the (gender) Equity Conference, and the Environmental Conference.

The City of Santa Monica

Santa Monica is not exceptionally affluent, despite its general reputation (which may be based on the fact that several celebrities reside in the city). About 20% of Santa Monica's total population of 86,000 people have annual incomes that are below the poverty level, and gangs, drugs, and crime are serious social problems in the south-central area of the city. Santa Monica is a hotbed of local political activity, with widespread participation in citizen organizations dedicated to political issues like the...
pollution of Santa Monica Bay, the some 2,000 homeless people in Santa Monica, and the proposed construction of new housing and industrial developments. In general, the city has a tradition of extending political and economic power to the less fortunate—a tradition which has earned its nickname: "The People's Republic of Santa Monica" (Kann, 1986; Schmitz, 1988a). So the PEN system is highly compatible with the political culture of Santa Monica.

Participation in PEN

As of November, 1992, 40 months after its launching, PEN had 4,900 registrants. Almost 200 messages were sent to city officials each month on the PEN system, and over 70,000 accesses were made to the electronic conferences during the third year (1991–92) of PEN's operation. In 1992, public accesses averaged over 5,000 per month by the approximately 1,000 PEN registrants who actively used the system (Dutton, Wyer, & O'Connell, 1992; Guthrie & Dutton, 1992). Most PEN usage stems from less than 20% of all registrants, in a use pattern similar to other interactive communication systems (Rogers, 1986).

The "average" PEN registrant's demographic profile as our sole indicator of PEN's democratic capabilities might lead one to conclude that PEN benefits only a homogeneous elite. A 1990 survey conducted after one year of PEN's operation2 (Guthrie et al., 1990) found that PEN registrants generally reflected the demographic characteristics of the Santa Monica population. The average household incomes of PEN registrants ($50,000.00 a year) were slightly higher than the average household income ($45,000.00 a year) in Santa Monica (Donnelly Demographics, 1989). However, the fact that 20% of PEN's registrants maintained household incomes below $30,000.00 suggests that PEN attracted a relatively high proportion of adopters from lower socioeconomic status groups. For example, a national study of computer owners found that an average of about 10% of households with incomes under $35,000.00 own computers (Kaminski, 1992).

PEN registrants differed from the general population of Santa Monica in three important ways. First, men were over-represented on PEN (65% of registrants were male), which is consistent with the general preponderance of male computer users (Dutton, Rogers, & Jun, 1987). Second, PEN registrants were more highly educated than are most city residents, since about 65% of PEN registrants completed at least four years of college, compared to 35% of Santa Monica residents (Guthrie, 1990). Third, PEN registrants exhibited a high level of political interest and activity. Approximately 30% of the PEN registrants, and almost 60% of the most frequent, or "heavy" PEN users expressed a high level of interest in politics, as compared to 15% of Santa Monica citizens not registered for PEN. PEN registrants were also more active in each of seven types of local political activity, such as attending City Council meetings and contacting city officials (Guthrie et al., 1990).

PEN's adopters have the unique attributes which often characterize the first users of a new information technology (Rogers, 1986). However, when we consider how PEN is used, and compare it to other public and private information networking systems, the "democratic" impacts of PEN become evident. The availability of free public access terminals, for instance, encouraged adoption by members of social groups (such as the homeless, and women) that are under-represented in most information systems.

PEN's Public Terminals

The first question when considering PEN's democratic potential is: "How were elements which promoted equality of access incorporated in PEN's design?" Some early studies revealed that the dominant liberal, democratic philosophy of the community intersected with a governing elite that supported political enfranchisement, to create a political climate favorable to PEN's development (Guthrie, 1988, 1990; Guthrie & Dutton, 1992; Schmitz, 1988a). For example, a comparison of four Los Angeles-area governments that contemplated creating community-based electronic networking systems found that Santa Monica had the strongest desire for widespread resident participation in public affairs (Guthrie, 1990; Guthrie & Dutton, 1992).

At the time that PEN was designed (1988/1989), Santa Monica's City Council was dominated by Santa Monicans for Renters' Rights (SMRR), a local political group that pioneered local rent control laws, and stressed political and economic enfranchisement for residents (Kann, 1986). At that time, the City Council was also headed by James Conn, pastor of the socially activist Church at Ocean Park. As pastor of the Church, Conn promoted a social agenda that included extensive feeding programs for the homeless, support for rent control ordinances, and an outreach to disadvantaged minorities (Schmitz, 1988b). This emphasis on popular enfranchisement is central to our understanding of why "The Peoples' Republic of Santa Monica" provided such fertile ground for the PEN experiment.

In the mid-1980s, the Santa Monica City Council established a municipal electronic mail system that one
City Council member nicknamed "Circuit City" (Katz, 1988). Ken Phillips, then the newly appointed Director of the Information Systems Department, worked closely with the City Council to develop the municipal electronic mail system that initially included members of the City Council, the city manager, and city department heads (Schmitz, 1988a). Close personal ties developed between Phillips and most City Council members, and these relationships shaped the introduction of PEN in important ways.

The Council's understanding and support of interactive electronic systems facilitated the development of the PEN system in 1988 and 1989 by Phillips, his staff, and several advisors (who included the present authors). Equally important, the City Council's political orientation led it to favor a system that was accessible to all Santa Monica residents, including residents from disadvantaged social groups.

As Phillips began to construct the framework of what would become PEN, he sought advice from several local opinion leaders. He also contacted Schmitz (one of the present authors), who had earlier studied the Santa Monica electronic mail system that linked city officials (Schmitz, 1987, 1988a). Phillips and Schmitz discussed the advantages that interactive communication systems often confer on socioeconomic elites, who are more likely to possess both the skills and the technology necessary to use such a system (Dutton, Rogers, & Jun, 1987). Phillips became convinced that widespread public access to PEN would be essential in order to obtain City Council support, local community support, and public funds for the system's creation and operation (Schmitz, 1988b). His conclusions were reinforced by a study commissioned by the city of Santa Monica (Schmitz, 1987). The study demonstrated favorable community support for an electronic mail system, but showed that while one third of residents had access to a computer at home or at work, only 11% possessed both the computer and modem necessary to use such a system.

By 1989, Phillips had already lined up City Council support, and outlined the structure, hardware, and software for an experimental system. He had also sketched an operational policy for the PEN system. The Hewlett-Packard Company agreed to donate equipment valued at $350,000.00, thus providing resources for more than 20 public terminals. This grant was made to the city of Santa Monica because of its history of using Hewlett-Packard equipment, and its reputation for competence in state-of-the-art computer technology. The city's emphasis on public terminals provided particularly favorable public relations for Hewlett-Packard, as well as for the city of Santa Monica.

Some stakeholders in Santa Monica favored a user-funded system and opposed public terminals (Guthrie, 1988). However, our interviews with City Council members, their informal advisors, and local public opinion leaders in Santa Monica indicated strong support for extending benefits to all community residents (Guthrie, 1988; Guthrie & Dutton, 1992; Schmitz, 1988a, 1988b). In retrospect, providing public terminals to access PEN was a crucial design decision, since it allowed residents who did not possess their own computer and modems to use the system.

A second crucial design decision was to provide PEN services free-of-charge. Feeling strongly that PEN should be provided to Santa Monica residents as a free local government service, Phillips ensured that no registration charges or user fees were collected by the PEN system. Instead, he convinced the City of Santa Monica to donate the personnel time of four staff people who monitor the system, handle user registration, answer users' questions, and enter information in the system (Dutton, Wyer, & O'Connell, 1992). Together, these two crucial design decisions ensured that PEN was accessible to all interested residents, whether or not they owned a computer and modem, or could afford to pay for an information service.

Equality of Access to PEN: Public Terminals, the Homeless, and Women

The availability of free public access terminals encouraged individuals (such as the homeless and women) to adopt PEN who could not otherwise participate in the interactive system. PEN also provided these individuals with unique opportunities to communicate about community issues of concern to them. This exchange led to the development of new social linkages between previously unacquainted users, as well as the formation of new political action groups.

Equality of Access and Public Terminal Users

According to Santa Monica's Information System Department, 50,000 of the quarter million accesses to PEN that occurred from the time PEN was first available in 1989 until 1992 (when the origin of the PEN log-on was no longer tracked by the system) originated from public terminals. Thus, public terminal log-ons constituted 23% of all log-ons.

As the number of PEN registrants increased, so did the percentage of registrants who reported not having a computer and modem at home or work. During the first year of operation, only 19% of PEN registrants lacked the computer and modem necessary to use PEN. After the second year, that percentage increased to 27%. As of June, 1992, one third of PEN registrants lacked a computer and modem. While most individuals who lacked the necessary hardware themselves did not use PEN very frequently, some became very heavy users—including several homeless persons who have been extremely active on PEN.

Our 1990 survey assessed respondents' level of PEN use and their primary means for such use (Guthrie et al.,
1990). Public terminals provided the primary means of access for PEN use by 15% of our sample of 225 total registrants. Public terminals also provided a secondary means of access for other users who ordinarily access PEN from home or work. A larger proportion of public terminal users were heavy users than were individuals that did not report public terminals as their primary means of PEN access. Almost 40% of public terminal users reported more than five log-ons per month on PEN.

Thus, public terminals were used both: (1) by individuals who used them because they otherwise lacked access to PEN; and (2) by individuals who used them to complement home or office use.

**Homeless Access: Participation in Political Communication and Political Action**

The most important issue in Santa Monica in recent years has been the issue of homelessness. This beach-side community, where approximately 7,000 homeless individuals reside among 90,000 permanent residents, has frequently confronted the problem of living in harmony with the homeless. Over the years, the City Council and its SMRR majority have also been increasingly pressured to control the homeless, and to keep them from “taking over Santa Monica.”

The most visible symbol of the city’s commitment to the homeless was a public program which fed 200 to 300 homeless individuals at City Hall at the close of each work day. This program was supported by City Attorney Robert Myers, a champion of the homeless in Santa Monica and a founding member of SMRR. Myers publicly refused City Council demands to prosecute homeless persons who violated city ordinances regulating camping in city parks. Myers was consequently fired by the City Council in September 1992, and the homeless feeding program was abandoned.

Myers’ dismissal was discussed in the PEN Homeless Conference by a homeless advocate, a homeless man, and two opposing members of City Council a few hours prior to the official decision (see Appendix). Myers’ firing was not reported by the Santa Monica newspaper until the following day. Thus, homeless individuals’ possession of advance information regarding Myers’ dismissal stemmed directly from their ability to use PEN via public terminals.

Much dialogue about the homeless issue in Santa Monica took place in PEN’s Homeless Conference. This conference was initiated two months after PEN began in 1989, and has included homeless participants since that time. The Homeless Conference has been one of the most active conferences on PEN, with over 10,000 entries by 1992, ranging from diatribes against the homeless or the homed, to solutions for all aspects of the homeless problem in Santa Monica.

Most of the initial participants in the Homeless Conference had not met in person, but gradually, some of the more active PEN users came to meet face-to-face. After several months, they formed the PEN Users’ Group, a group of PEN registrants (including several homeless men) that met to discuss homeless and environmental issues. In August, 1989, the PEN Users’ Group evolved into the PEN Action Group—a group that was formed with the objective of turning words and ideas into community action for the homeless.

Thus, PEN was critical, both to forming the Action Group and to guiding its agenda. The PEN Action Group first “met” in the PEN Homeless Conference, and there formed a broad initial consensus on changes needed in Santa Monica. Not only did the PEN Action Group include homeless persons, but several of the criteria for effective solutions to homeless issues originated with homeless members.

The group’s initial project—SHWASHLOCK (Showers, WASHERs, and LOCKers) reflected the cruel paradox that the homeless faced in their efforts to obtain employment. Homeless individuals must first store their possessions, groom themselves, and clean their clothes to effectively apply for a job. Yet, without a job, homeless individuals lack resources to effectively apply for work and thus remain trapped in a cycle of joblessness and poverty. For this reason, the PEN Action Group persuaded the City Council to fund a facility to provide showers and lockers to the homeless. In addition to the $125,000.00 obtained from the city government for this
project, the group raised money for vouchers that enable the homeless to use washers at a local laundromat.

PEN's Homeless Conference and its person-to-person electronic mail services not only provided the PEN Action Group with its impetus, it also provided the group with a means whereby it could coordinate its activities. Thus, the "homed" and the homeless interacted by using PEN as their communication medium. For the homeless, the public terminals provided the semblance of a home address from which they could initiate and maintain contact with others (Schmitz, 1988b; Schmitz, Rogers, Phillips, & Paschal, 1993).

An illustration of PEN use by the homeless is provided by one of the present authors who met a homeless man named "Dan." Dan originated the Job Bank Project of the PEN Action Group, which listed jobs to which homeless individuals could apply. This meeting occurred in a community center with a PEN public terminal. After another homeless man finished using the PEN terminal, Dan logged-on to check his electronic mail (he had several items) and to "catch up" on the Homeless Conference. He was greatly angered by the following comments about transients made by a conservative City Council member. After a scathing aside to the present author, he entered a response to the Council member:

8:655) CITY COUNCILMAN HOLBROOK
16-SEP-92 20:36

Last Saturday evening my wife and I walked down the Promenade from Wilshire to Arizona. On the opposite sidewalk, walking in the same direction, was a transient. He was shouting some of the filthiest profanity that you can only imagine. Several of the pedestrians commented that he was nuts, violent, on drugs, etc. I would have had him arrested for disturbing my peace if I had encountered a police officer. We found a nice place to eat at one of the outside cafes. A transient woman walked in and went from table to table. She was asking for change for food. When she got to me I asked her to leave us alone. A man at the next table jumped up and asked her if she was hungry. She said yes and he bought her a dinner. Thirty minutes later I was standing in the movie line around the corner when she worked that line asking for change for food. My observation that she earns her livelihood in one of the oldest professions. She is a beggar. And that is okay with most of you who read and comment on "homeless." I think that people should have more to look forward to in life then living off Bill M---- free food, or someone else's free food. I really wonder why Bill and the other condone this sad unproductive life style.

8:670 DAN
18-SEP-92 11:40

re: Mr. Holbrook's experiences on the Promenade: One question—how did you know that either person was truly a transient. Did you ask them?

Without the electronic channels provided by the PEN system, homeless and homed residents were unlikely to have come into contact with one another, let alone engage in protracted discussions. The lack of social presence on the PEN system meant that the appearance and social status of the participants did not limit their ability to effectively exchange information (in this case, about the issue of homelessness). Both the homeless and the homed brought important information and attitudes to the exchange. For example, homeless individuals countered the stereotype, held by many homed participants in the PEN Action Group, that homeless people do not want to be employed. In return, homed individuals brought important information resources to the PEN Action Group, including information concerning how to obtain funding for SHWASHLOCK.

Thus, for homeless users, PEN provided an opportunity to establish initial information-exchange relationships with higher-status individuals, via PEN's public terminals. For female users, PEN provided the capability to meet in an electronic space that allowed some initially unacquainted women to share their common political interests.

Equality of Access and Women

One source of inequity that has received little attention in past research is the lack of female representation in public electronic networking systems. For example, three years after Cleveland’s public electronic network, Free-Net, was initiated (in 1986), only 16% of the 7,000 individuals registered to use the system were female (Aumente, 1990). In contrast, an investigation by one of the present authors revealed that six months after the initiation of Santa Monica's Public Electronic Network, approximately 30%3 of registrants were female. This proportion seems particularly large when we consider that these female users registered at an early stage in PEN's collective diffusion process, when only the most innovative individuals tend to adopt such systems (Guthrie et al., 1990; Markus, 1987; Rogers, 1983).

What was it about the PEN system that led to such a relatively high rate of female adoption? The perceived accessibility of PEN's public terminals is one explanation. Past studies show that males are more likely than females to attend computer education classes, to belong to computer-centered social organizations, and to own and/or regularly use a personal computer and modem (Chen, 1987; Kominski, 1992; Lansing & Bates, 1992; Miura, 1987; Parasuraman & Igbaria, 1990; Rogers,

---

3 This figure, indicating that 30% of the individuals who registered to use PEN six months after it was initiated were female, is approximate. The names of all citizens registered to use PEN were provided to the authors by the City of Santa Monica Information Systems Department, which supervises PEN. Registrants' gender was not recorded. The percentage of male and female users was estimated by counting obviously "masculine" and "feminine" names. Gender-neutral names, like Terry, were eliminated from the total population of names, making the percentage of female registrants cited an approximate figure.
Dutton, & Jun, 1987). Their lack of access to computing systems limits the degree to which women can try out an innovation like an electronic bulletin board system without investing considerable time and money in the necessary technology (Rogers, 1986).

Our 1989 survey of PEN adopters shows that PEN's public terminals encouraged female adopters who did not possess their own computers to "try out" the PEN system. Over 40% of the women who registered to use PEN did not have access to a personal computer and/or a modem through which they could use PEN either at home or at work (see Table 1). The proportion of female registrants who did not have access was also significantly greater than the proportion of male registrants who did not have access (19% of male registrants). However, only 18% of female PEN users (registrants who logged onto PEN at least once in the first six months that it was available in 1989) reported that they used PEN's public terminals. Thus, female users were not significantly more likely to participate in PEN through public terminals than were male users (see Table 2).

Based on this information, we conclude that a large proportion of female adopters who did not have access to PEN through private modems anticipated gaining access through public terminals. However, a much smaller proportion of female adopters actually did gain access in this manner (Collins-Jarvis, 1993; Guthrie et al., 1990).

Female Access: Participation in Political Communication and Political Action

According to some scholars, electronic networking systems offer women a new, more equitable channel for participation in political discussion and political action (Friessen, 1992; Matheson, 1992; Petry & Greber, 1990; Smith & Balka, 1988). These scholars propose that the ability of electronic networking systems to eliminate gender-related social cues may reduce the normative tendencies for males to dominate, and females to retreat from the public discussion of political issues. Electronic networking systems may also provide a more convenient channel for the development of feminist support networks that encourage female involvement in the public sphere (Friessen, 1992; Perry & Greber, 1990; Smith & Balka, 1988).

Our examination of PEN confirms that electronic networking systems can provide women with another channel through which they can participate in the public life of their community. The majority of women who used PEN intensively in the first year of its operation were active participants in community politics who used the system to extend their participation. According to our 1989 survey of PEN registrants, the average level of local political participation among female adopters was significantly higher than it was for male adopters (see Table 3).

Interviews with a few women who were "heavy users" of PEN in its first year of operation (referred to here by pseudonyms) revealed that PEN allowed some female users to develop supportive social networks with other women who were also active in the local political arena ("Jeanine," March 3, 1990; PENFEMME meeting, March 25, 1990; "Suzanne," March 13, 1990). For a few women, however, PEN provided a new means of involvement in community politics, including a new source of information and, especially, an alternative source of social support. One early PEN user, "Marilyn," attributed her increased involvement in political activism to her interactions on PEN, and the friendships that developed from these interactions.

Prior to her participation in PEN, as Marilyn reported, "I really had no interest in community politics or planning or any of that stuff" ("Marilyn," April 2, 1990). After becoming a frequent PEN user, however, Marilyn participated in the PEN Action Group, and interacted (through PEN and in person) with other politically interested women. The PEN Action Group also provided Marilyn with an example of political activism which inspired her to organize a paper-recycling committee in the building where she works. As she recounted:

I've been walking around and talking to people and thinking "How am I going to do this? This is too much for me." Then I thought about PEN today and I thought


<table>
<thead>
<tr>
<th>Private access to any modem</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>18.66 (39)</td>
<td>39.74 (79)</td>
<td>24.39 (118)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>81.34 (170)</td>
<td>60.26 (54)</td>
<td>75.61 (224)</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100.00 (209)</td>
<td>100.00 (78)</td>
<td>100.00 (287)</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 287, missing = 16, $\chi^2 = 12.9$, $p < .001$.


<table>
<thead>
<tr>
<th>Use of PEN's public terminals</th>
<th>Gender</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>87.44 (139)</td>
<td>81.50 (20)</td>
<td>74.60 (159)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12.60 (44)</td>
<td>18.50 (10)</td>
<td>18.40 (54)</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>100.00 (183)</td>
<td>100.00 (30)</td>
<td>100.00 (213)</td>
<td></td>
</tr>
</tbody>
</table>

Note: N = 213, missing = 6, $\chi^2 = 1.18$, $p > .05$. 

works that encourage female involvement in the public sphere (Friessen, 1992; Perry & Greber, 1990; Smith & Balka, 1988).
TABLE 3. Mean scores on measures of political participation in the past year by male and female PEN registrants.

<table>
<thead>
<tr>
<th></th>
<th>Male (n = 209)</th>
<th>Female (n = 78)</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attend city governance meeting</td>
<td>1.2 5.1</td>
<td>5.3 12.7</td>
<td>2.4^b</td>
<td>89.8</td>
</tr>
<tr>
<td>Contact city government</td>
<td>6.2 16.6</td>
<td>22.5 48.8</td>
<td>2.9^*</td>
<td>90.6</td>
</tr>
<tr>
<td>Listen to city meeting (radio)</td>
<td>3.4 5.9</td>
<td>6.7 11.1</td>
<td>2.6^b</td>
<td>99.6</td>
</tr>
<tr>
<td>Watch city meeting (TV)</td>
<td>2.9 6.7</td>
<td>5.0 9.1</td>
<td>1.9^*</td>
<td>119.0</td>
</tr>
</tbody>
</table>

Note: ^p < .05; ^p < .01; ^p < .001.

“Well how did they [the PEN Action Group] get SWASHLOCK going?” They did it there with about five people who were really active and then there were about 20 people who said “You can do it, and I'm behind you, I wish I could do more”—at least that kind of moral support and I thought, “That's what I need.” I'm making this committee where I work based on my experiences on PEN (“Marilyn,” April 2, 1990).

Interviews with Marilyn and other early female adopters revealed that PEN’s interactive conferences allowed women to participate in pluralistic public discussions with other residents (“Jeanine,” March 3, 1990; Marilyn, April 2, 1990; PENFEMME meeting, April, 1990; “Suzanne,” March 13, 1990). However, some of these early discussions were marred by a few male participants who attempted to dominate the system.

Respondents recounted an episode in the first year of the PEN system’s history, when a few male users repeatedly engaged in communication activities on PEN’s interactive conferences that some female users found offensive. These activities included: (1) incorporating the names of female PEN users in an interactive sexual fantasy narrative with a “domination” theme; and (2) making offensive remarks to female users who supported a pro-choice position in a PEN conference concerning abortion issues (i.e., by calling female users “Feminazis,” “baby-killers,” and “ugly old and stupid”).

According to the respondents, the level of perceived hostility toward female users became so intense at the end of PEN’s first six months that some female users considered leaving the system altogether. However, other female users decided to combat this hostility by forming a female PEN users' support group (nicknamed “PENFEMME”) (“Jeanine,” March 3, 1990; “Suzanne,” March 13, 1990; “Marilyn,” April 2, 1990). Members of PENFEMME collaborated to suppress male hostility by refusing to respond to any offensive comments made by male users. PENFEMME advocated and successfully obtained consent from PEN's system operators to include interactive conferences on PEN that were specifically dedicated to such women’s issues as domestic violence, sexual equity, and child care.

Thus, PEN provided women with opportunities that most electronic networking systems fail to offer. First, the provision of free public terminals encouraged women to adopt PEN, even if they did not have access to personal computers and modems. Free public access is particularly important in attracting women to a public information system such as PEN, since women are less likely than men to own or use personal computers and modems. Second, by providing interactive public conferences dedicated to political issues, PEN gave women a new (or additional) channel through which they could participate in pluralistic political discussions, and form supportive social networks with other female users. In the same way that PEN’s Homeless Conference brought together homeless and homed individuals who were unlikely to have otherwise met, PEN’s Abortion Issues Conference brought together women who were (mostly) unknown to one another, but who shared common interests.

Conclusions

Here we examined: (1) how the Public Electronic Network in Santa Monica, CA, was designed as a “democratic” information technology system; and (2) the impact of this design on the equality of access and participation among representatives of social groups (like the homeless and women) that do not normally use electronic networking systems. We conclude that:

(1) An electronic communication system like PEN can provide greater diversity among participants in an information-exchange process that centers on a common issue, such as homelessness or gender-based inequities. Persons of widely differing backgrounds and perspectives can talk with one another (although they may not necessarily agree) via an electronic interaction system that provides free public access. In Santa Monica, both homeless and homed residents who were unlikely to undertake a meaningful exchange within a face-to-face context (such as a City Council meeting) were able to discuss the homeless issue through PEN. Thus, extremely heterophilous
individuals who only share a common interest in some community issues can interact via a public electronic networking system that provides open access through free public terminals.

(2) An interactive technology like PEN can help overcome social distance (as well as physical distance) between individuals who wish to communicate about a topic of common interest. The PEN system revealed that communication via an electronic networking system can partly overcome the effects of socioeconomic status differences, physical appearance, and social network distance. The PEN system also revealed that communication via an electronic system can reduce gender differences, if the system designers allow women to reinvent the system in a manner that appeals to the particular norms and values of female users.

(3) Electronic communication systems like PEN can empower the information-disadvantaged by: (i) by facilitating their access to useful information (particularly political information); and (ii) providing them with a way to become integrated into a social network or activist group, as the case of PENFEMME suggests.

Thus, our analysis of the PEN system in Santa Monica illuminates how an interactive communication technology like PEN helps us recapture the participatory democracy once found in the small rural community of the past.

Appendix

Sample Entries from PEN's Homeless Issues Conference

18:482) HOMELESS ADVOCATE (B) 08-SEP-92
14:17 I will probably be there, but I don't plan to speak. If I remember correctly, since this is an "Item 9," one cannot address it. Of course, public comments are welcomed <sic> at the end. My friends and I feel that this is another "done deal," which means we will probably have to fight this out in court if the ordinance is accepted as is.

I suspect that the City Council will try to fire our City Attorney again tonight and I fear that whether it is tonight or sometime in the future, the majority of the CC will indeed let him go. . . . Sooner or later, our City Attorney will be gone; probably much sooner than later. The last hurrah of irony is that what will be lost is Rent Control, for this is the real issue.

18:483) HOMELESS MAN (D) 08-SEP-92
14:21 I think homelessness is the real issue. People don't want people around who have nowhere to be.

18:484) CITY COUNCIL MEMBER (K) 08-SEP-92
15:28 Members of the public are welcome to address the council on "9" items.

References


Schmitz, J. (1988b). Unpublished field notes of interviews with Ken Phillips, Director of Information Services, Santa Monica; City Council member Abdo; and minutes of two Santa Monica staff meetings with the City Manager and Department Heads to implement PEN. Annenberg School for Communication, University of Southern California, Los Angeles, CA.
