

Marcy: There is a strong feeling in a lot of people in the group that we want to make sure that the context of the system includes information about political and social activities and that it helps people organize themselves in opposition to the existing political system.

Greens: What do you mean in opposition of the existing system? What do you think this might be? What do you intend to do? I'm not worried about it; I want to know what

Marcy: I think that there we don't want to be too terribly directive and that we want events, activities ranging from anti nuclear activities, to self help health to food coops and to anti intervention groups, a whole spectrum of political and social activities.

Lee: We're in the position of developing what might be called a new communication medium, but I don't think it should be called that broad a name, but we don't know of a better name. And we're in the position of having certain desires regarding the kind of information that it will facilitate, but we know if we try to control the information in the medium, it will fail. So, we're still at the last stages of the design process, so we still have some control, but we don't really know what we have control over. So that we're going...

I think we should give a more detailed explanation of what Community Memory is, because I think you may not have background. Community Memory is a system of non-hierarchical com. technology. It's a medium for information which people want to put out and to receive, info which will direct them towards other people that they want to get in touch with. It is not a system through which the primary or fundamental communication between people takes place. It is supposed to be a system like a notice board where you find or put up the information about who you want to reach. The primary transaction occurs elsewhere through direct contact. It is a nonbroadcast medium. It is a network of computers with terminals.

Greens: This leads to: Who can use it?

Lee: You have to be able to read, and you have to be able to use a keyboard; not of course as a fast typist.

Greens: And you should have a computer of your own at home?

Lee (et al): No, no.

Lee: Very important. It is a public... One of its intents is to develop a network of neighborhood info centers, where there will be the terminal.

Greens: So there will be a building in the neighborhood, where there will be the terminal?

Lee: Yes, and there will be several, somewhere between sixteen to maybe fifty connected to one computer. That computer is operated by the collection of individuals or groups who are at the terminal sites: the hosts of the terminals. So the computers can be, in effect,

collectively owned at a local level.

These computers will store information that is entered from the terminals and allow the users at the terminals to retrieve that information. Now, we can show you how that works.

Greens: The room where the terminal is is a public access room, like a post office, you can go in there certain hours, and you can sit down and then you can get the access to the (unintelligible)

Karen: Right now we're places like a bookstore-coffeehouse, a senior center where seniors go for meals and recreational activities and there are a lot of meetings that take place there; a store that's just down the street and sells appropriate technology, the Whole Earth Access store; La Pena, which is a neighborhood cultural center which attracts a lot of Hispanic people, a lot of Latin American exiles. Different places like that where people ordinarily meet and congregate anyway, places where there is enough foot traffic that the terminals will be in use alot. Once this database of information starts building up, and these questions and these inquiries, we want a lot of people to be there, we want put it in places where there are people to start with.

Greens: So the system doesn't exist yet, but you're working on it?

Karen: We hope to have terminals in place by the end of February. We're actually talking to people in terms of people of when can we put it in. We hope to have two or three in place very soon.

Greens: To understand what you're doing...what things should people communicate about with computers. I don't see. I think its very good to organize community communications. We do the same thing. But until now nobody in Germany would get the idea to do this. As far as I see.

Another Green: something about a project in Berlin.

Marcy: Isn't the German Post Office developing videotex--Bildschirmtext--it's different but it uses alot of the same technology. The main difference is that the information, the contents of Bildschirmtext will be provided by people called information providers, and they're commercial interests as you know; they'll be selling their services and their goods. And it'll be one way, from the information and commercial providers to everybody else who'll be consumers of information in the same way that they can now consume entertainment and news information on the existing broadcast media. We see that this is a case where the same or very, very similar technology can be used to facilitate two-way communication, community communications as you call it.

Phil: Community Memory tries to encourage people to react and respond to what they read. In fact, it has a mechanism explicitly built in to it so that any time, at any point you're reading something that somebody has said or broadcast to the world, people who use thing can; you're encouraged to say, "Okay, I have something I want to say about that." About anything you read that somebody has added to a Community Memory system, you have the option of saying "I want to respond to that" and add a message that will be linked in a permanent sense.

Greens: Let's be concrete about this. Suppose I read an ad by a food co-op about their fantastic produce, how it's organically grown and I'm dissatisfied with it. So I would enter on my terminal "These guys are full of shit."

Phil: Right, exactly.

Greens: And all the other users on the terminal would be seeing that message.

Phil: Right, everytime somebody saw the message about the food co-op, there's be a notice that would say somebody has written a response to this about how bad it is, and they could go read yours.

Lee: You wouldn't see what it was about, on that information. It would just say, do you want to see the response.

Phil: Well, you'd see a list of titles; you'd get one sentence in order to attract a user's attention and if that title succeeds then you can have a whole messages. We'll demonstrate it and it'll be more concrete.

In turn, somebody could respond to your message by adding yet another message, and say, "Well I tried it I thought, etc." It basically allows every statement of opinion or controversy to become a whole conversation in which people can respond to each other about whatever it turns out to be, and hopefully organize something about that.

Greens: So as I see, you are doing something like the organization of the traditional market.

Lee: Very much like that.

Greens: Traditional, not the modern kind of market, the traditional market, that's what you want.

Marcy: We want it to be an exchange of ideas.

Greens: Smaller markets have been like that, yes. There has been the market (what about church?) and the communication that went on there, it was a market with people

(Garble, garble)

Okay, okay, it's a brilliant idea. It's a brilliant idea to do something like this. Organizing of markets, even if you say, we don't want to have the business people inside it, the advertisers and things like that. In effect, you're trying to regain what marketplace means.

Lee: I think we would use the word marketplace.

Greens: It's my interpretation, it can be wrong.

Marcy: No I think it's very close to what we mean. I think the word market is a little difficult, (garble) existing social relations.

Other contributions: Village square, marketplace, agora

Greens: Then that is market.

Marcy: Yes. But we don't mean to suggest that it would just be exchanges of between individuals. We also believe that individuals can agglomerate and can plan and coordinate, and organize for themselves, large-scale, social-scale activities and operations and that in fact, Community Memory could be a tool for opening up participation in those kinds of social planning processes as well.

To us, when we say that, it feels very impossible and utopian, but I think you having more input into the government policy and you can start thinking about those things.

One of the other things that we think about is how Community Memory will shape people's attitudes towards computer technology. We've seen, and I know you've seen in the past ten years a remarkable transformation of attitudes towards this technology from the time when people were very much afraid of computers and thought it was Big Brother. And saw, I think correctly, that computers do facilitate Big Brother: surveillance and control over their jobs, and elimination of their means of livelihood and so on. And we're real worried, and we're really trying to figure out ways to make sure Community Memory doesn't reinforce uncritical attitudes or accept uncritical attitudes towards computers. And I think that it's important to make alliances with groups, like groups in Germany working against the personell information thing.

I think computer technology is a technology where you can say that it can be used and it can be abused. It's not so clear with other technologies. It's important to come down on the right side of that.

Greens: Why are you working with computers in the first place? What don't you do it with, say papers?

(garble, garble)

Lee: We've most of us come through that experience, indirectly, at least. That's been going on. But we have taken the approach, others may not agree with this completely, but let me just say it. I've taken the approach that there is the potential for a tool which has tremendous possibilities, and the existing structure will not generate that tool for us. We can create the form of this tool. We have pretty much done that. Then, if the tool is well formed, it will have a life of its own. What we would like to see, I think...I have to go back to myself. My perspective is that I would like to see tools made which allow

for society to regain many of the values of village life without the idiocy of village life.

Greens: What do you think is idiocy of village life?

Lee: Isolation, constriction of the range of possibilities of the individual, restraining that to the very small physical community. And also the even excessive conformity which can and does occur in traditional villages. All of which I think is traced to that fact that within a village the number of possible avenues of communications are quite limited. That is to say there is only a limited number of people and it is seen as somewhat not quite right to go and talk with people outside the group. So those kinds of problems are not necessary if one wishes to have a society based on a certain level of communal life in addition to a certain level of individual life.

The objections have always been essentially technical: How can I talk to everybody? How can I know everyone?

Greens: Who wants to?

Marcy: You want a filter..

Lee: Somebody who wants to get out of a village, get out of a very tight constricting situation.

Marcy: You want a filter to find a people that you're interested in, you don't want the pool of possible acquaintances to be limited to your village. You want to be able to come to another continent like are today, to talk to people who have more interests and ideas.

Lee: Up to now, that's been done by going to the city, but then one finds that one is an individual with no contacts, and if one is lucky, you can rebuild a kind of a village within the city. I was turned on to that by the writing of Jane Jacobs. It's my opinion that we have within us a kind of a village structure. And that's the structure of communication that works.

Greens: I think it responds to culture of human society. You have a small part of people you talk to. And if you see what's going on if people move from the villages to the big cities, they have only close contact to the same amount of people they had in the village. And that doesn't seem to be only a coincidence. I think it's very true that you can only have limited possibility to get acquainted (garble) close (garble) superficial. And that's one thing. I think society should organize this neighborhood feeling.

And the next thing is, if you want to see another culture. I'm just thinking it over what you're doing, if I had stayed in Germany and I get in contact by this computer with you. I can talk to you. You can respond, you can answer. But I don't believe that I would get the same reality as when I'm coming here

and look at you and see what's going on, the context.

Lee: What we're going now is exchanging primary information when we talk. But what the computer system does is to exchange secondary information which leads us to this contact. So, that's one important point. Some people think we're building a computer system to substitute for human communication. This is not true. It's to augment, and make possible, human communication, through other channels.

Phil: To help people find each other, that's one of our main goals of the system. And in terms of its advantages over paper, one of them is that as these communities are formed and are linked together, you can have a system in which people can communicate over longer distances; perhaps Germany; in a way that wouldn't really be possible with paper. In other words, there wouldn't be any one place where you'd be able to put all the papers, and there wouldn't be any way you could sort through them.

Greens: In other words, if I want to read personal ads, suppose I'm a lonely city being with a lack of city contacts. Now in the paper section, I go to the classifieds, of the Bay Guardian, things like that, and I put my ad in there. There is a certain cost about putting in the ad, a certain ad for making the paper and so on. (garble) planning, editorializing, and distributing the newspaper, garble.

What you are saying is that if I had a community terminal, first of all I'd get a certain amount of instantaneousness. I'd put my entry in a terminal and it shows up. Whatever I enter, let's say it's a personal ad, I'm lonely, that ad will simultaneously show up on bulletin boards that are connected to the bulletin board.

Phil: But further, if you decided that you wanted to do something that was outside of just a local thing, let's say you wanted to coordinate some sort of a joint demonstration and that could be in two places that are widely separated, that that sort of information you might want to have appearing in other bulletin boards.

Lee: We would hope that people would expect to find all kinds of possible information in the system. The one reason that these classified newspapers are not widely used for these other uses are expectations. In a way, we say that they have a myth associated with them. The Bay Guardian has a very good myth with regards to personal ads, but you don't look there for political ads necessarily. I don't know if they do, but (mumble)

George: Well, I think there's another concept, as an outsider. I'm not a member of Community Memory, but there's one way I can maybe translate part of this concept that might be useful, if I could?

That is to see this in terms of a decentralized approach to .. ok, let's take for example a community newsletter. A community newsletter is a very centralized operation, and it requires a staff to put it together full time. All the information that's collected from the outside world, all the notices and the personals and the articles and opinion statements it brings in have to be processed centrally by that staff full time, have to be edited somehow by that staff and then have to be sent back out again. In the process of course, a lot of resources in the form of paper are being concerned. And this takes up their full time work.

In the case of something like Community Memory, you have a completely decentralized input where the input is not controlled by anyone, where the machine is basically, as it were, in some central location, does all the compiling and so that it's a completely decentralized method of communication. People can get on it and off it and transmit any kind of information they want to without having to go through a centralized staff. It's de-hierarchicalized by virtue of that, and it also provides immediate access, and it provides access at practically any level. In other words, the Bay Guardian has one specific clientele it speaks to, the Bay Express speaks to yet another, each of these papers and newsletters has a certain specific cultural niche.

The type of communication network these folks are trying to set up is one that will hopefully cut across a broad spectrum of those because it will allow anybody who want to to create their own little niche, and start attracting the kinds of people that they're interested in to that niche, and out of that great patchwork grows something that's larger than the sum of the parts.

Lee: I'd say that you described the difference between broadcast and nonbroadcast media.

George: Or narrowcast, you could also call it, I suppose.

Greens: There was a period when everybody bought his own film camera. These film cameras are now laying somewhere in the houses. People realized to make a film it needs also not only a camera, but an idea. So, I ask you, what's your idea? You can't only provide an instrument, you must have a message too.

Karen: When they first put in telephones, the first trans-continental telephone line in the United States, someone said, "But what does New York have to say to California?" Why do we need these telephone lines?

I look at what we're trying to do is much more like a telephone. Its hard to play the cello over the telephone perhaps, the telephone doesn't have enough bandwidth to carry all the sound. But basically, in terms of the spoken message...it's what Ivan Illich calls a convivial instrument. It doesn't take very much skill to pick it up and use it, and it doesn't control what we do with it within a certain range of things. For spoken communication, you can use the telephone for anything.

I think a Community Memory terminal, you don't need much training to use it, and you can use it for anything. The step between having a need for people, and defining that as an information need generally isn't very great. If you don't have a job, if you need a job, you need information about how to find a job. What do you do? You start to ask your friends, and you start to look in the want ads. That's the information seeking behavior of the ordinary person. If you've got something you want to say, you write a letter to the editor, or you start to talk and tell your friends your theory or your new idea.

In terms of the way that people go about looking for information and go about disseminating information in the hundreds and hundreds of ways that they do (go to the Co-op and look at the bulletin boards) the structure of Community Memory fits in very well to the ordinary information seeking patterns, and information distribution patterns of ordinary people who have needs either to say something or to find out an answer.

Lee: Our experience with the first experiment ten years ago was most enlightening, because we put the terminal in at a place, a record store, where we did not really know that there was very functioning bulletin board already. This is a bulletin board used by musicians, and many of them were making their living off of that information. And we found that when we set the terminal up, immediately, the musicians started using the terminal. They quickly discovered that this technology was superior to the paper technology on the bulletin board. And as a result, we accumulated the largest batch of information we could identify on the system. Because we had not pre-categorized it, the largest identifiable batch was items about music and musicians. Usually looking for gigs, for bands, that sort of thing. We didn't expect that we figured that people would use it for jobs, cars and housing. Well, this might fit in the jobs category, but only loosely.

We also found a very wide range of what we could call even literary uses of the machine, little bits of poetry going in, always with a reference: for more poetry, call my number.

Green: The musician who sticks up a piece of paper on the bulletin board has the limitation of how big of a sheet of paper he or she can put up there, and how long it takes to write it. Did you find that the musicians started to be more

detailed about what exactly they want on the terminal than they had been on the bulletin board?

Lee: You might be able to make your own judgement because we have a printout of the database, and we did in fact sort for musician and music items. You can look those over. I think they didn't tend to be long-winded about it. The important point is that you would be able to search for an item according to search words, key words, which you can't do on a bulletin board easily. And also no item is going to overlap yours. It's just physically better, there's more equality of access to information through this system. Nobody's going to take your message down and stuff like that.

Greens: Can't you erase messages?

Lee: We are trying to make it as difficult as possible to erase

Phil: He means (garble, garble)

Lee: We want messages to expire according to date. And we would prefer not to be able to remove messages otherwise. However we may have to watch out for legal consequences, and we may have to have an opportunity to do this. But generally, when someone puts a message in, they can't erase it, no one can erase it until the expiration date.

Greens: You said there would be 15 or 16 terminals.

Lee: For each computer, and these computers then intercommunicate to form a larger network.

Green: And what (garble)

Lee: Well, we have a technical limitation right away. We're trying to get started as rapidly as we can, so we have to keep them very close to the machine, which is here, so it will be in Berkeley, although we were looking in San Francisco otherwise. We're going to start with three or four.

Greens: How would I get a message in?

Lee: You would go to a location where the terminal exists, and you would sit down at the terminal, and you would probably be able to begin searching without putting any money in the coinbox. The coinboxes come later, we're not waiting for them. But at a certain point you'll have to put in between five and ten cents per minute of operation.

[Tape flip]

This would happen alot. People would come in, and if no one was using the terminal they wouldn't necessarily go up to it. But if someone was using the terminal, they'd hang around and they'd look and the person using the terminal would begin to explain over their shoulder what they're doing. And then that person would be finished and they'd leave and the other person would wait to see if anyone else was going to sit down, then sit down, start using it, and the process would repeat. Someone else would come in, and that person would be explaining. So people teach each other, in a serial fashion. That's rather important. You're wondering perhaps how you would learn to use it. Probably from the person in front of you. You'll make your own judgment about how hard it is to use, we have the system available here.

Greens: Then the message is in a central machine here or what? Everybody can call for it.

Lee: No, it's available from the same terminal where you put it in, and other terminals connected to the same system.

Greens: What you put in can be read, first of all, at all sixteen stations, at La Pena, if somebody else walks in at La Pena and picks that thing up he'll see your message there so that rather than sticking up the thing at Whole Earth and at La Pena, the note is stuck up in all sixteen stations?

Marcy: Right.

Greens: Would there be somebody to check what has been put in?

Lee: Not directly. There's no human intermediary. You use it directly. One of the things that we didn't really expect but we proved ten years ago was that this will work. People can use it without an intermediary. And I think in fact that was the first public access computer system other than a game playing system that existed. But the people who'll be necessary in running the system involve one or two people for a system like that. Someone has to maintain responsibility for the condition of the equipment. There's a certain amount of work to be done in the expiration of items, in whatever kind of administrative work is necessary for something like that, it shouldn't be much. We estimate between one-and-a-half and two full time equivalent positions would be necessary for one node. A node is the computer with the terminals. And as I say nodes interconnect to other nodes, that's the design of the system. At that level there is not center. It is a decentralized mesh. And there are communications protocols which enable this. So there is no bureaucracy over this local level.

Greens: How much capital do you need initially for the sixteen terminals? And how did you raise it?

Lee: Well, we are not typical.

Karen: I think we figured the computer cost itself at \$30,000.

We're talking right now about terminals that cost maybe \$700 or \$750 apiece...

Greens: What's the memory of the computer? What size is it?

Lee: 70 megabytes right now.

Karen: I'm trying to remember. Including modems and installation of telephone lines, I think they added up to around \$60,000 or so. We did a model figuring all of the costs, the installation costs, the monthly telephone costs, the costs of the person to run the system, renting a room for the computer, in case the community organization would have to have an extra office for the computer and the people to run, and trying to figure all of the costs, and then see how many quarters we'd have to collect every day to balance out at the end. With fifteen terminals it came out to be over 60 uses a day per terminal.

That's over three years. If you add four more terminals, if you have 20 terminals, the cost of an additional terminal isn't that great, and if you have 20 or 25 terminals, it gets lower and lower.

Lee: We use the number 15 or 16 right now because that's what we open at with no modifications in the operating system, in the software. There are other systems available which will start out at forty, and I think one of the areas of work we will be continuing will be to continually increase the number of terminals that can use each node, because you see how the economics works out. Your base cost is rather high, but your income is based on a per-terminal calculation.

Greens: If the memory's as big as you said, if you want to use it and look for some message, you have to have (garble) you can't do it in this normal point, it means half an hour or an hour. It's too long to wait for that. And how to you want to teach people to use it with special desires to find things?

Lee: Phil, do you want to talk about that?

Phil: I think maybe it would be better to demonstrate it than to talk about it.

Lee: It's much easier than you think. The reason is because we have intelligence and machines don't. We can do things like imagine. We can imagine a word that someone might have attached to an item.

Greens: In other words you have to sort of second guess what were the keywords in this?

Lee: Yes, exactly.

Phil: But it allows you to browse in various ways. If you have an idea of a word that might be in the message that you're looking for, you can use that, and the searching is much faster. It only

takes half a minute or so. Or course we don't have a really large database now.

Carl: I think it will stay at about that speed. Some categories are more narrow, the system can locate messages in two seconds; I don't think there is anything that would really take half a minute to get a response.

Greens: Why don't you talk a little bit about how is the personal computer a competition for you. After all, the personal computer is a more decentralized use at first sight anyway. You have the whole thing. If you buy a modem you can interconnect with others. You have Apple networks, and all these things.

Karen: I think one of the things with a lot of the computer bulletin board system is that first of all, when you look at them, they're all full of computer things. There's very little on computer networks that talks about anything besides computers.

Phil: This is often because calling in to them requires knowing alot about computers or having one yourself.

Greens: garble

Karen: Most of the people who start them up are people who are very excited about computers and want to talk more about computers.

Greens: Those systems are not very user friendly.

Karen: I would say that 90% of the computer bulletin board systems that are out there are small ones where somebody's got their own personal computer, so that you can call in and exchange messages, and I'd say 90% of them out there deal mostly with things to do with computers. There are some of them that deal with politics, there are some of them used, say, in small business to exchange information back and forth with clients. There are things like CompuServe and The Source which are large information providers that have a large range of different services. But still beyond UPI which is the news service, beyond shopping and services like that, a lot of the things on the Source and a lot of things on CompuServe are again things for people who use computers alot.

Lee: There are technical limitations as well. The bulletin board services generally operate with only one user at a time.

Greens: In other words, if you're occupying the line....

Lee: That's it, everybody else gets a busy signal.

Phil: That's for almost all personal computers. They can only handle one thing at a time.

Lee: The size of the database is small, generally in the region of 300 to 500 items or so, and the search methodology is very clumsy. We started working on this, well, we started back in '72 or '73. But Community Memory has been working on the development since 1977. And in the meantime, the bulletin boards came out, and many people said to us, "what are you wasting your time on, they're already doing it." But we're doing what we think will be necessary for a meaningful, societal application, meaningful use. We know what we do has got to grow on its own, and not just stop because like citizens band it got boring, or it got cluttered up.

Karen: Another thing is that right now 5% of the homes in America have personal computers. That's the estimate. And of the people who have personal computers, only 15% have modems, so we're talking right now about 1% of the population at most that is able and does use home computers for that kind of communication.

George: And there's a socio-economic which ties in also, which is that the cost of setting up a personal computer may be something like at least a few hundred dollars but at the same time if you've got a system like Community Memory all you need is a dime in your pocket. It's like a public telephone in a way, anybody can use it for five cents. In that sense it makes it a lot more democratically accessible to people who could never begin to set up or get the cost of having their own terminal.

Greens: Why don't people at computer stores go into the same business? They have the capital, the resources and the understanding. They come into contact with other people they could tie into their system.

Lee: Just because you're selling computers doesn't mean you're anything other than a small merchant. Why don't they? They probably should. Why don't the libraries do it too? Well, we're not going to wait.

Marcy: Libraries would be more likely to do it, if they had the money, than the small computer merchants. And I think the small computer merchants don't have the money to do it, and furthermore, the people connected with the computer industry who are doing it are doing it with a very different philosophy. Even though they're using the same technology, it's going to turn out to be a very, very different tool.

Greens: From where do you get the money to install it? How do you raise the capital for such a project? So far, and in the future?

Lee: So far, we've financed it out of our own pockets, and we've solicited some donations elsewhere. I myself have so far been through two computer designs that have paid back in terms of royalties or stock or something, and I've plowed that back in. But not everybody can do that.

Marcy: And we've also tried to sell commercially the software that we've developed for Community Memory with mixed

Lee: Mixed results.

Marcy: And mostly bad results.

Lee: It keeps us going. But we don't expect that the Community Memory system down the line, when it gets out, is going to be financed the same way. First, the nodes we hope to be owned and operated by an association of the hosts, so the costs can be divided by the number of terminal hosts.

Greens: You'd ask the store to chip in on the capital costs, because the store gets a certain amount of ancillary business, because he has a terminal.

Marcy: Or probably, more likely, we'd ask a community group that was hosting a terminal to join with us in raising money from foundations, or municipal governments.

Lee: We're going to try that out because we don't have the resources that we know of to continue the system. We have enough to start. So we're going to put it out on the basis of here it is, now if you're supporters don't support it and you, it goes away. It's a risk, but we think it could be done. Especially after the first one exists.

Marcy: Another thing I'd like to do before the demonstration is to find out what the Greens are thinking and doing about computer technology.

Greens: It could be a very long meeting. We should need for that quite a lot of time. Til now we have a rather (garble) point of view. This is the first time we hear something concrete. And another thing then, business administration, and things like that. And as far as I see it, until now we are very skeptic seeing what modern technology and computer technology has done. On the one side we there develops people lose their jobs, because of modern technology and machinery and on the second side, we hear that people lose skills, garble, we think there might be something like a (technic?) Thinking of mankind, there should be not only the thinking of projects and categories.

We think that there are quite a lot of categories, (garble) there's producing information, communication, when you do this, you help.

For us, computers are not the same as a tool, or something like that. It's a little bit more. And there is a (garble) for a work that might be dangerous, quite dangerous. That's how we discuss it till now. What we are looking for is if there are (garble) other (garble) for using computers. Til now, for me, I don't find anything that really gives something new, so we should use it. Til now.

If you have a newspaper, you have information. (Garble) With the computer, you lose another thing. You've got most of the news and

you can do it yourself. But you lose (garble)
 If you look at alternative versions, you have pictures, and in your style of doing it. I don't see how you can get this in the computer. A form which is this (garble) thing.

Marcy: It's not a substitute for newspapers either. I also love newspapers, and I work on newspapers, and I worry that these computer communications systems will degrade the quality of writing, as well as the quality of thinking. And I think there's going to be a lot of garbage on the system, and that's going to be one of its weaknesses. That's what it's not going to be good at. On the newspaper you have a filter, you have an editor, and you have a selection process, and you have a certain political and world viewpoint.

Phil: One thing that eventually you might be able to have to make that a little bit better in terms of filtering the noise and to allow people to be their own editors in a sense, in other words allow people to collect messages here and there, and put them together in a particular form, to package them and say here is a collection of references to a bunch of messages about a particular topic that I've edited, and here's what I've had to say about them. I mean, this is not something that it does now, it's another application that could be added, and I don't think it replaces newspapers. But I think it can help the problem of there just being too much noise, and there not being enough integration of different things, different articles, different things people have said.

Lee: What you're saying is, I would repeat, you're talking about the newspapers as handling primary information. And that's why we say, we don't want to attempt to replace that. It wouldn't work. It would be wrong. It would be destructive. On the other hand, consider how much easier it would be to put out a newspaper, or a very small newsletter, or something, if you knew exactly who you would send it to, if you knew you had people who wanted to read it. And it's therefore possible to solicit people through this system, and exchange that kind of information. Yes, I want to hear what you have to say about such and such. And you get enough of them, you can afford to put out a paper.

Phil: You can find the contributors as well as the readers.

Greens: You can also use the whole system itself as a way of disseminating information.

Greens: Dialog

Greens: To the extent that it's providing news. It seems like a reasonable model to use the system as a way of originating information rather than find the resources for a newspaper.

Lee: Well, that's the argument for using in for primary information. Which it will do also, to a certain extent.

Philip: The other thing that it does is that it's an interactive system. If you take a newspaper, if you write something, people read it, you get a few letters back, but you really don't get much chance to see a dialog or conversation going on between people with different viewpoints in a newspaper.

Phil: Right, by the time you publish a newspaper you could actually take a dialog that had occurred, and you could have not only an article about something but you could also have things that people have said about it, and things that people have said about that. In other words, instead of publishing an article, and then in the next issue publishing a bunch of letters in response, and then in the next issue the response to that, you could publish one thing, which would be the article, the responses, and the responses to that in one piece of paper.

Greens: That's a very big (garble) problem. The moment high technology innovation (garble) is a modern technology problem which is a problem of acceptance (garble) process. And til now (garble) cultural and political (garble) resistance against it. And what you are doing, as far as I see, from an objective point of view...this interests here are okay, I don't care about that, but on the objective point of view, I would say, isn't this approach one that would bring up the acceptance of this modern times, modern (garble) which we don't want. We don't want that. We don't think that this is a development of society (garble) we should fight, on the contrary. Much more community, what you taught us, (garble) our thinking.

Marcy: Well, we're worried about that.

Greens: Isn't it really something like producing of acceptance and you are doing very fine small work, like that, on the other side big business is ...

Marcy: It's something that we've worried about a lot, and my feeling is that it's something that we have to explicitly, we have to say, we have to talk about repressive uses of computer technology. We have to talk about all the objections that you bring up. We have to talk about the way that it's possible for computer technology to degrade the quality of people's thinking. And it gets into a pretty complex discussion about the ways which not only technologies can be used or abused, depending on the social uses to which they're put, but also the ways in which technologies embody the social relationships under which they were created.

Karen: And we tried (garble) this Community Memory

system, it will attract attention. It will attract attention in the national press. We can use this as a platform to say, "This computer system embodies certain political principles." We will be able to say that. I think, having worked in New York in the electronic publishing business, big business is having a very hard time in learning the lesson that people want to communicate with each other. People don't want to just sign on their computers and read the newswires, and buy refrigerators and do their banking. People really want to communicate with each other. In any videotex trial where there's been any sort of mail functions so that the people can exchange messages with each other, they've been incredibly surprised at how much it (garble) to be used.

A group of people who were on The Source sort of staged an insurrection, wrote their own little piece of software to let them each publish magazines, and when the Source started analyzing who was using the Source, they found out that one of the highest-used features on the Source, was the user-written magazines, these people wanted to communicate with each other a lot. And I think we're really strongly emphasizing that message: people want to communicate with each other.

Carl: Also, I think that in the United States, I'm not sure to what extent this is true in Germany, but, in this country, the resistance that you talked about is being systematically broken down, and has already broken down to a large extent. People are not that critical of computer technology (garble) and it's being accepted. If you can't get people to reject it outright, maybe at least you can try to set up some kind of a demonstration where when they see a contrast between one way of using it and another way, maybe it will enable them to see that there are bad ways of using this technology and there are good ways. There are ways that do things that I want to see done and there are ways that do things that I don't want to see done.

Greens: The point of view is (garble) I think you are very right. You see in Germany, the video market developed faster than in the United States, and in the United States the personal computer market developed much faster than in Germany. When you've got a (garble) of buying around Christmas time, then there's computer fairs, you see "Daddy", the fourteen year olds...

Karen: If you don't buy your kid a computer right now, he won't get a job when he grows up.

George: May I can address your concern about community

control, if I might? It's something like this; I can refer back to the history of broadcast television. When television got started with the idea that now we can send pictures through space, there was initially a debate as to how to operate that system and there were two basic modes that were proposed. One was the common carrier, and the other was broadcast. With common carrier, TV would be something like a telephone that was connected to the outside world. You'd get in, you'd get your timeslot, you'd pay a small fixed fee for that like a utility, and you'd communicate your message to the world. Instead what we have is a corporate developed which dominated it as basically a commercial tool for promoting commercial information and shaping culture in that way.

Now our country is faced with this new communication technology in the form of computers, and we also see that there are large, powerful interests which are trying to promote a certain approach to this, an approach which is hierarchical in which information is generated by an information utility such as the Source, in which the users can receive that and consume that, but can't communicate through it, can't communicate with each other through that. Right now, a group like Community Memory is in a position to be able launch an alternative to that, so we'll see an evolution in the awareness of people about computers, from the position it might have been at ten years ago, which is either computers are good, or computers are bad, whereas what's developing now is which is a more critical and more, I don't know how to put this, but the kind of awareness that says, if people have developed along with the system like Community Memory and have that system in their neighborhoods then when some large powerful interest comes in with a system that's hierarchical, or that's vertically integrated, or that comes in as a top-down method for promoting commercials or other things that aren't community based, there'll be the awareness of alternative options and possibilities, and people, I think, will be in a better position to resist those developments of computer technology and communication technology which are more repressive because they've been exposed to an alternative and so forth.

Marcy: Computer technology is not only used for communications, and we're been focusing on that a lot. Computer technology is also used for military uses, for surveillance, for job control and job elimination, but I think that however that the uncritical, accepting ideology that's been developed by the personal computer industry in this country does spill over to people, and they become less critical, and less able to resist these other repressive uses of computing technology. And I think that if we're involved in any kind of project, communications or otherwise that has to do with computers, it's really incumbent on us to be aware that that positive, uncritical attitude can spill over, and to explicitly fight this. If there was an anti-personnel information campaign here, I would argue that Community Memory should be closely allied with it. If the Greens do something in Germany, I think that they should be closely allied with that. I think you should be addressing all these negative uses of computers, and if you don't, and if we don't, then we are acting as public relations for the computer industry, and for a whole ideology of progress and technology, and economic growth and all those things that the left has been guilty of in the past. And I think that over the last ten years, with attitudes toward environmental issues and nuclear power, the left has been, in general, has been putting forward a much more critical, more complex attitude towards technology and progress and economic growth. And I think that there is a danger now that all that work could be undone by fostering these uncritical attitudes towards computers. And I would hate to see that happen. I would hate to see Community Memory have a part in that.

Lee: I would like to continue that from another perspective because I think we have a disagreement within the group of this sort. My perspective is as an engineer, as a designer of computers. And especially, as having participated in the original development of the personal computer industry. What happened there, and to a little extent we can take some credit for it, but not much. The industry began...
[change tapes]

the spread of information, technical information. A generation building its own infrastructure from the bottom, and that's what it was like for the first two years. At that point, then capital began to come in, and the communications lines were broken down, to a large extent. But the overall structure of how things were done survived, to the point whereby, in way, we can say that the personal computer industry has developed a methodology which is much more inclusive, and has forced someone like IBM to adopt that ideology whether that's good or not.

Ward: I think that's garbage.

Lee: Well, thank you very much. I'm always able to say "Were you there?", but we'll get to that later. And you were there

at other places. I told you it's a disagreement. Look, I don't know any way to uninvent computers. But I do know ways to reinvent them. And you can make up your minds not to have computers and that's fine. But I don't think it would do anything for you. They would have you, in that case.

Greens: It's a little more difficult I think. If you take technology like nuclear power plants, it's easy to say "No, abolish it." In this special technique of computers, it's more difficult, I think, because you can use it as a tool, but you have to be conscious of it. And you lose humanity. You lost it already in history with the first technics coming up in communication. And you will lose it in the future too, and I think if we use this tool, if we want it, or if we don't want it, it makes no difference, it will be used. But we have to be aware, that there is a loss, there is a loss in the communication. If you take a telephone for example. It's a difference in telephone and personal connections. You can speak, but you lose a lot.

Ward: I don't understand. You lose by comparison with something else, but if you still do the something else, you haven't lost anything out of your life. So I'm confused about what loss we're talking about. If we're talking about the different characteristics of different ways in which people come together, then I understand that some ways have certain attributes and deficiencies, and other ways have others. But in terms of the whole of one's life's meeting of other people, I don't see where the net loss is.

Greens: You talk with a certain emphasis that people want to communicate with each other. And I think you have a very, very reduced sense of what communication is. Because if communication is going through the computer

Karen: But you see, if you have a need for some kind of information, for some kind of contact with someone else, and you live in a very large, complex urban community, you start out by asking your friends perhaps, do you know how to do this, you look around, you may look in the newspaper. And what we're trying to create is another way to bring people in touch with each other, to let the computer do all of the work of sorting through all of the possible categories and checking out lots of channels, to encourage the serendipitous way, to add another means of communications, to add another channel, to add another way for people to find each other if they have similar interests.

Lee: We do not suggest that the computer should replace face-to-face communication and other unmediated communications. It is an adjunct. It is meant to make it easier.

Karen: Tell the bagel story.

Lee: Okay. A good example. When we put the first system out,

we seeded it with some questions. I want to know where you can get bagels in the Bay Area. At that time, it had not come out from New York to San Francisco. Now you have bagel shops on the corner. But, then they were scarce. And so we got three answers, and two of them were what you expect. Where you could find or buy bagels. The third one said "If you call the following phone number, and ask for the following person, an ex-bagel maker, a former bagel maker will teach you how to make bagels."

Now, how else could you do that. It would be difficult. In fact, we didn't expect it. That contact, only indicating the possibility of an exchange, but showing you how to start it, that's what we want to facilitate.

George: I can give you another example. Let's say a high school student who suddenly becomes aware of something like the disarmament movement but doesn't know exactly where to look it up. The student in high school reads a newspaper article one day that makes him or her get aware about the disarmament movement but doesn't know how to go about making a contact with that and maybe they don't know, and maybe they live in an area where they don't know how to contact a group that's doing that, or they want to meet people who are involved and talk to them about it.

Well, previously, they'd have to think, well the article in the news mentioned the Livermore Action Group, well do they have an office around here, and do they have a phone number, and how can I find them, and all this. Well, with a new system, all they'd have to do is get on and type in disarmament, and up would come a list of groups that are working on this and other people, and they'd have phone numbers they could call, and they could also meet people on a one-to-one level, or find out about other information, or things like this. So it becomes a method by which people can get at, in other words, just like you wanted to learn how to make bagels, you can find a bagel-maker, if you wanted to learn how to get involved in a petition against the arms race, or be involved in a local civil disobedience action or whatever the case might be you could do that also, or you could do practically anything else, but the point can't be made too strongly that it's not to replace the personal contact, it just a means by which someone who might be otherwise uninformed could get in, and make contacts that they would have to follow up on in person on the outside. And also they could write back in, they could say, "I've just learned about disarmament, and I'd like to teach these things to anyone else who wants to know, who's never dealt with this issue before. Anyone who'd interested can call me." This kind of thing. But it doesn't replace the personal contact, it rather just gives a channel by which people who don't have any other means to reach each other can do that.

Greens: I think your example that's information not communication.

George: Yeah, yeah. Communication is what people do after they've got the information but the way things are happening in this country right now, we're developing towards a point where we're saturated as it were, in other words people are bombarded with so much stuff, so much information, and so much of it has no meaningful content for them, that have no way of sorting it through. And that way you can do either one of two things. You can either spend a large portion of your life digging out the details you're looking for from all this stuff that comes in, or you can try to find a way to sort of streamline that so you can get right at what you're looking for for your own specific uses.

Karen: There are a lot of organizations that spend a lot of time and energy and a lot of paper printing directories, directories of organic gardening resources in the Bay Area, directories of food sources, of organic food in the Bay Area, directories of organizations that are involved in politics in the Bay Area, a lot of time is spent doing that, and then people who are looking for the information still have to know that the directory is available and be able to go to the place where the directory is being sold, where it's available in the library before they'll find the information.

Lee: And then it's out of date.

Ward: I think we're overemphasizing two things: one, we're overemphasizing the computer. It's not a computer project. There's a computer attached, but it's not a computer project. And we would have some difficulty; we seem to be confused about it ourselves, in making that clear to everyone else. But it's not a computer project. Nobody's doing it...well, some people may be doing it because it's an outlet for their work interest in computers. But the idea itself, if it could be done without a computer, I like to think we would all do it without a computer. So there's something about this that isn't being done, and cannot be done, any other way. And that's why I think we're overemphasizing the second point, which addresses your point of reduction of communication to information. We've talked alot about how easy to retrieve information, and then we talk about how difficult it is for somebody else to produce directories and to reach their audience. Well, the fact of the matter is that somebody else does that. So all we're offering is a gee-whiz way to get at that, at some level. So it's nice to know that it's an information retrieval, and that's better than doing it on paper, but it's really not new. What's essentially different is the kinds of conversations and exchanges that we expect to have appear on the network. It's not a computer, it's a network. That's what we think cannot be done any other way. It's not kind

of thing you can do in your own home, it's not the kind of thing you can do by reading the newspaper, it's not the kind of thing you can do by picking up a phone. If we could think of another way to do it, we would do it. But there is no other means of doing it than to use a computer, and that is why a computer is involved. Now I'm reconstructing history here of course; in fact we all got in it in a different way. But that, I think, puts the whole level of discussion on an entirely different plane, and tries to set aside the thing of is this a computer (fetish?) which I think is an important question. I know that I as a programmer have written many things that were better done by paper. So we should really concentrate on this distinction.

1. Computer Movement in Berkeley.

Berkeley, known as the birth place of student movement and hippie culture of 1960's, still inherits the ~~anti~~ counter cultural tradition and produced many progressive citizen movement, such as "Independence of handicapped" and providing shelters for the aliens from Central and South America.

In this Berkeley there has started a computer movement called "Community Memory". This movement aims to

~~create~~ promote the spirit of Free Speech Movement and the

{ the formation of } public communication media by combining
{ to organize the }

technology of Silicon Valley.

The C.M. ~~it~~ was started in 1973, ~~when there was no~~ personal computer. Three terminals were established in the city, and the experiment to create the citizen's network started. During its first 14 months of experiment, 8,000 messages ~~were~~ ^{were} input. Since 1976 the effort to explore more up to date system, and a new experiment has started since 1984 when a software for UNIX was developed.

~~There are~~

Three terminals of C.M. are placed at Telegraph Co-op, La Pina (?) and Whole ^{Earth} Access in Berkeley. There are a wide variety of message; ~~we~~ car pool information, exchange ads for used goods, criticism on Reagan's Star War Plan, etc. etc.

Technically speaking, three terminals connected by the host computer at the head office of C.M. Each terminal calls the host and ~~s~~ writes messages on its electronic bulletin board.

When the ~~author~~ } visited the head office, the founder of C.M., Lee Felsenstein, was about to leave the office. Lee ~~was~~ told the author that he was going to go to repair one of the terminals, which surprised the author. Because Lee was the ~~best~~ advocate of "Bring the power of computer in the hands of citizens" and was the first president of Homebrew Club which gave a great impact on the early days of personal computer industry. The author did not expect such a distinguished man to go out for repairment.

The author had an opportunity to discuss with Carl ^{Farrington} Halington (?), the manager (?), and ^{Karen Paulsell} Karen Paulsel (?) of C.M. According to them, since the installation of three terminals in 1984, 600 per month utilized the services, and the number of information input per month is more than 1,000. In the future they want to increase the terminals to 16 or 20 locations in various public places. They want to sell their system to other community and expand their movement. At ^{the} present time, C.M. does not charge for the use of terminals. But they would like to instal coin boxes and charge 25 cents per message soon. They think if ~~at~~ one terminal is used minimum of 51 times, C.M. system can financially be independent. The first ~~instalment~~ instalation of the system is \$ 53,600, and monthly ~~instalment~~ ^(including overhead) expenses year is \$ 4,145.

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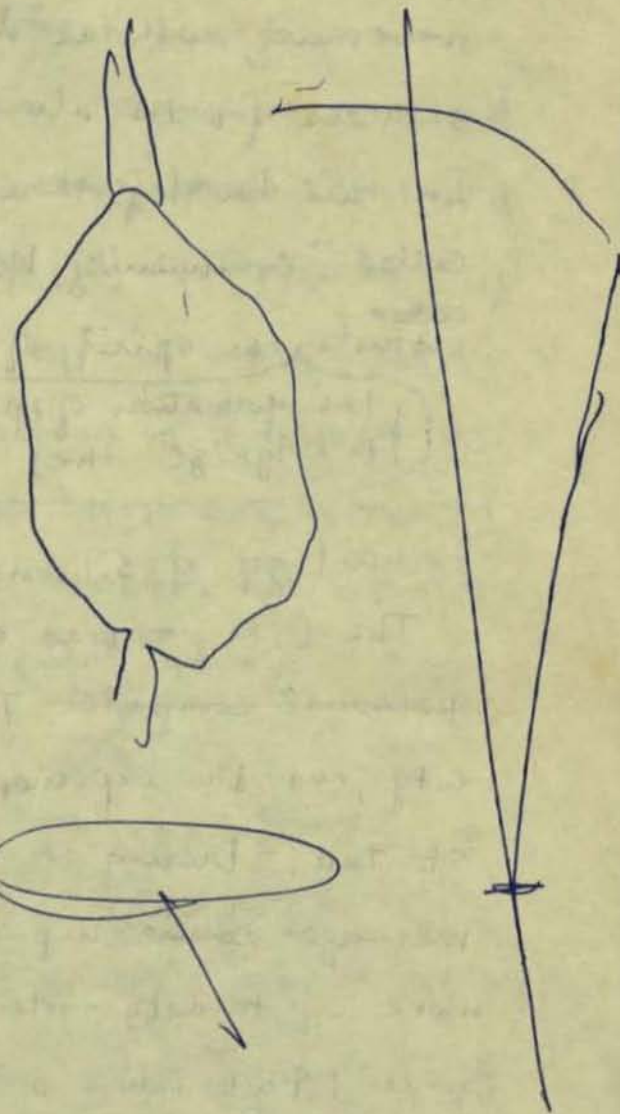
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History of Electronic Bulletin Board (EBB)

The first group which used a term, Electronic Bulletin Board, was Community Memory ^(started in 1973) in Berkeley. It was the time when no personal computer was invented ("marketed"), C.M. used a host computer called XDS-940 which was an obsolete and beaten-up machine (although the size was big) and installed three dums ^(dum?) terminals at three different ^{public} locations.

In the computer history book, the origin of BBS systems is often said to have started when Christensen (?) (1978) and his colleagues used personal computers, but the real ^{origin} ~~start~~ of ^{the} philosophy and movement of BBS were indeed took place at C.M. Leer describes the motivation when he first used ^{{ BBS(?)} EBB as the leader of C.M. following:

"When I ~~have~~ ^{had} to explain (describe) what was C.M., I used (utilized) the image of bulletin board. I asked ^(replied) people if they wanted to use our bulletin board. Then I told them that we used computer. If I had ~~had~~ asked them ~~that~~ if they wanted to use computer from the beginning, it would have given fear and confusion in the people's minds."

In January of 1975, the experimental operation of CM was ^{terminated} ~~stopped~~ (stopped). The staffs of CM were exhausted, & The system had to be ^{{ reevaluated} reviewed and was necessary to start from the new approach.

The re-start of CM was a very tedious (slow) process.

In 1976 the reorganization of the group was made. The host computer and the terminals were improved. In 1980 the development of software for CM was started. After 10 years since its first implementation (experiment) of CM, the test-run (experimental operation) ~~was started~~ began in ~~the~~ May, 1984.

During those years, CM was often the target of bad joke, "Neverending task, CM". But there is no doubt that in spite of all the problems, CM became the legend leaving ~~the~~ ^{certain memory} among those who engage in grass-root activities; ~~as~~ The ~~learn~~ memory which predicted the alternative to our ~~the memo me~~ culture,

Alternative ^{by} with computer

What kind of alternative computer technology did the
the movement to create the computer network for citizens
in the U.S.?

{ produced
give birth to

Computer which does not { separate people.
divide the communication
among people.

This is
a heading
of new
chapter

The group which ~~produced~~ achieve this is C.M. of Berkeley.
How personal computers are used now? They are used

in each user's room, basically by an individual users.
^{On the other hand} ~~whereas~~ C.M. { refuses
objects that type of environment and aims
it to be used in public places ~~is the~~ with many people.

Those who can not afford to buy a personal computer
can participate in ^{C.M.'s} computer network by paying 25 cents.

In this kind of environment both citizens and establishment
can join computer culture equally. When this takes
place, computers will be used as ~~the~~ ^{the} ~~the~~ ~~extension~~ of means
of promoting the communication or association of living human,
rather than ^{(the association of} dividing up one individual ~~from~~ from one
others.

What C.M. proved possible was the fact that the computer
technology itself { changes
takes different direction } when citizens started to

participate in the computer culture.

The computer culture is a culture of people who are interested in the computer and who are using it in a way that is different from the way that most people are using it. It is a culture of people who are interested in the computer and who are using it in a way that is different from the way that most people are using it.

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Re: Community Memory

The Community Memory Project

916 Parker St. Berkeley, CA 94710 415-841-1114

Direct social interaction increasingly has been displaced by a network of industrialized social relations. Modern alienation, perfected with the aid of electronic media, has become identified with these media -- particularly with the computer and television. The Community Memory Project is an attempt to demonstrate the possibility of using computer technology to support an expansion of public space rather than to reinforce passivity and powerlessness.

The Community Memory system will be a decentralized public information network based on small, modern computers. Terminals in high-traffic locations like coffee houses, laundromats and the offices of community groups will provide unmediated access to a powerful communications tool for pooling and exchanging information of any kind. Messages will be typed into the system on a typewriter-like keyboard and will be displayed on a TV screen or printed on paper.

The purpose of Community Memory is to support the direct and unmediated exchange of information. Community Memory could be used to discuss issues, exchange information, make connections between groups and individuals with common interests, prepare newsletters, and aid the planning, decision making and day-to-day work of federations, cooperatives and collectives.

The designers of Community Memory would like to see a world not broken up into nation-states or corporate states, but one built upon many overlapping regions of concern, from household to region to globe, where decisions are made by all those affected. We see Community Memory as a harbinger of the technics that will allow non-hierarchical yet coordinated decision making on a social level -- and as a means of enhancing our power to bring about the prerequisite social transformation.

The Community Memory programs have been under development for several years and are almost complete. Village Design, a Berkeley-based non-profit group, is hoping to find the money to set up a demonstration of 10 to 12 terminals in the Bay Area in 1981. Village Design publishes the quarterly Journal of Community Communications, available from PO Box 996, Berkeley, CA 94701. Subscriptions are \$9 per year, \$12 outside the US, or \$2.50 for a sample copy.

A pamphlet on the Community Memory Project is available for \$1.00 from 916 Parker Street, Berkeley, CA 94703.

R is 4 + this is bit steep NOPE - see New Whole Earth Catalogue

Community Memory - truly public access

In response to the question "what application of computers will bring about the greatest impact on the form of society", the nearly uniform answer one receives is: computer conferencing. Public computer information utilities have found universally that their conferencing services consistently outpace all other services in terms of usership. The efficacy of conferencing has been demonstrated within large organizations from its inception, when NASA developed a networked conferencing system to facilitate the Apollo program.

When one examines the body of software available to be used to implement computer conferencing, one is struck by the architectural similarities among the various packages. It is as if development on computer conferencing software had stopped in 1977 with the exception of cosmetic or variational differences. There are great differences internally between conferencing software meant to reside in a corporate mainframe computer and software for the hobbyist "BBS" (bulletin board system), however, all such systems handle their information in a similar fashion, using a linear scrolling system of organization.

Using one of these systems is as if the user has entered a library from medieval times. There are scrolls available to be unrolled and read, but no indexing system aside from the names of the scrolls and the numbers given to each entry on them. Only one scroll may be examined at a time and one's contribution may be entered only at the end of the scroll. Once entered, the contribution may not be altered except (in some systems) by complete erasure.

This "scrolling" system is best suited for users who are facile with the written word, who know how to organize their thoughts and marshall their arguments in written documents. Academic seminars come to mind when analogous situations are considered. This is reasonable, considering that conferencing arose within an engineering environment and came to public availability through academic systems (the first and most influential of which was the "EIES" system of the New Jersey Institute of Technology, created by Murray Turoff and Starr Roxanne Hiltz).

Most people in their daily interactions do not submit themselves to such discipline. Accordingly, a "chat" feature has developed on many BBS systems which allows for instantaneous communication among many users, usually without creating a record. This, most similar to the chaos of Citizen's Band radio, has proven entertaining but not particularly useful.

Electronic mail, or e-mail, provides a method of sending messages from one user to another, or to a list of recipients. Both sender and recipient must connect to a given computer or computer network in order to exchange e-mail. Naturally, the sender must know the identity of the recipient.

T. Oronstein

The Community Memory Project was formed in 1977 by the organizers of a 1973 experiment in making computer power accessible to the public. A database management system was created and was set up with two terminals in public places in Berkeley and San Francisco. Users could walk up to the terminal and examine messages left by others as well as leave messages. The system was described as "an electronic bulletin board" to prospective users, perhaps the first time that phrase was given public circulation. Most significantly, the messages were categorized by the users themselves using whatever words they wished -- the database management system would create new indices where necessary.

The operators noticed a far wider range of proposed transactions than they had anticipated, and a high degree of enthusiasm among the users. By not requiring that all messages fit under preset categories, the system had provided an outlet for the same sort of creativity that most people use in ordering their everyday communications.

Sensing that a new possibility had been uncovered, the operators continued development work after the initial project had been discontinued (in January of 1975). In 1977 The Community Memory Project was established as a non-profit corporation and much software development was done. A second system of four terminals in Berkeley was established in 1984 and operated until 1988, when it was closed down in anticipation of the next system, which went into operation in August of 1989 and remains in operation to date with eleven public terminals.

Community Memory is a system which exists to serve the purpose of helping people who use it to locate appropriate communication partners for whatever reason may be desired. Once the partners have located each other, their interactions are best carried out through other channels. In a certain sense, this is the function served by the town square, the village marketplace, or the agora of the Greek city-states. One spends time in these environments overhearing conversations, interjecting comments, soliciting suggestions for communication partners, in coming to know and be known by the other participants. Once one has learned who one should speak with, the discussion moves into private.

Community Memory is therefore a conferencing system which allows its users to:

1. select an interest area (forum) by using index words,
2. search for messages within the forum by using index words or by examining the latest entries,
3. examine comments which other users have attached to any message,
4. add a comment to any desired message,
5. add a message to a forum or attach the message to several forums simultaneously,
6. range among several forums and display a set of messages from each forum.
7. display a message based upon its unique "tag" number,
8. attach several index words, not necessarily restricted to a pre-existing list, to one's message,
9. return later to edit the message one has previously entered or to edit its index words.

The analogue to Community Memory is far from the academic seminar. It is rather the uncontrolled discussion which takes place in public places, or on unofficial notice boards where comments may be attached to posted items. It is designed to provide the necessary mobility of information which is necessary in approaching the ideal of a free market. It should be seen as a method of ensuring orderly public accessibility to a constantly-changing body of information which is created by the public itself.

Community Memory operates on a computer which uses the Unix V operating system. 386 type AT computers are the least expensive such machines at the current time. A special "front-end" program has been written to run on ordinary PCs, XTs and ATs which allows that machine to become an "intelligent terminal" and to interact with the Unix computer in the fastest and most efficient way. It is ironic to note that all other conferencing programs require that the user run software on the personal computer which reduces it to the primitive status of a terminal.

The Unix V "back end" computer on which the Community Memory software runs may be accessed by modem connection through telephone lines. Back end computers may intercommunicate, and data may be exchanged between them. Thus, two Community Memory systems on opposite sides of the earth may exchange information items on a daily basis, or even more frequently.

Roger Fitcham

Fl. - ART.

Correct
+ return

Sandy Emerson Interview

Friday, March 2 1979

SE -- Sandy Emerson
AK -- Art Kleiner

AK: ...we're collaborating on a short piece for Coevolution Quarterly on computer networks. We're assuming that some sort of national computer network is inevitable.

SE: It probably is.

AK: We're assuming that there'll be two ways that they'll go... We're also aware that there are other groups who have (inaudible)

SE: Who else did you think of?

AK: We're thinking of two corporations whose names I don't remember. ... (not necessary stuff)

SE: But you think that there will be some sort of high-speed, high-tech, ...

AK: It seems like what's going on will point to it. A lot of people have written about it..

SE: People have been writing about it for years (laughs)...

AK: Until this year it didn't seem like the predictions were...

E: Finite.

(Laughter)

AK: And Jim Warren mentioned that he would be ready sometime by the end of 1979 (inaudible)... (mentions Johnson-Lenz) I'm not sure ~~whatxthey~~ whether they're still in operation.

E: They have made their computer available to to (inaudible) and they have used their computer, which most of the time is (inaudible), to do surveys, to exchange information... they continue to do that. They're trying to get it going in a sustaining operation I don't know that they foresee a national system. They let those groups who are interested use their computer directly, and that's very important. In that a lot of people who envision a computer network provide services and information which are still mediated by a staff.

It's the degree of interactivity to which (inaudible)

AK: What we're proposing to do in the COEV piece is to ask maybe seven... or enough questions to give people an idea of what the choices will be, on computer networks.

E: Have you read an article by Laurence Press? I'll give it to you. It's a pretty good article.

AK: That would be great.

E: It was written a few years ago. but a lot of it's still true. The commercial development of information for a market should be halted...

AK: That would be great. q (about the article)...

E: He says we should wait until the issues are clearer socially

AK: Does he still feel that way?"

E: Well, with regard to community memory, he said, Oh that's OK, that's not what I meant... But with regard to the manipulation of utilities which is controlled by ATT, he still agrees.

AK: What Jim Warren said -- he was talking about the Public Utilities Commission, and said so far they haven't regulated the information networks at all except -- somebody told IBM they couldn't operate one because of the anti-trust laws...

E: The FCC has been deciding those issues -- who's going to run networks -- on a case-by-case basis... they really don't have a communications network policy and

Emerson ->

the regulatory picture is that the FCC can assume regulatory responsibility or it can reject responsibility and put it into a free market kind of situation ... most people think it should go to the free market...

The big thing about AT as a monopoly is that they have set standards -for all of their hardware and so-called (inaudible) Most of the computer network technology has been developed for the military ... the military started it... the military developed networking which does connect with small computers ARPANET Yeah, right...

AK: I know the man in charge of ARPANET at Lawrence Berkeley Labs is 17...

I haven't talked to him yet...

Apparently there have been proposals to make ARPANET available to personal computers --PCNET?

SE: Uhhh... no. That's a different thing. PCNET is an association of people who own personal computers who -- they are getting modems -- if someone in the personal computer network wanted to send a message to somebody else he can either phone up that person or if it's long distance, phone him the message by a series of computer codes. ...

The idea is that they've done documentation and their proposal is going to be to set standards for ~~putting together~~ ~~xxxxxxx~~ the capability a computer network should have... and there is a PCNET running in the community for which (inaudible)... and most of the channels of it is being used for chit-chat.. as far as I can tell... but it's a good constructive use, and reaching out from your personal computer is usually sort of good... (inaudible) at this moment they've done some work with indexing and retrieval.

AK: But they could establish a large computer and make it available...

SE: Oh, they could...

AK: But it costs too much

SE: (Laughter)... ARPANET (some comment about cost of ARPANET) Computer time is getting cheaper but it's still pretty expensive...

The thing about the development of ARPANET and all that technology which in fact makes a national community memory system possible ~~ixx~~ was interesting with the documentation on it -- it was a classified operation -- one of the things that holds ARPANET together as a network is a system which sends the same message several times -- first real fast but very sloppy, ~~thax~~ as opposed to sending the complete message perfectly .. takes several different connects to get it across... gets all put together at the other side.

They developed it so that if Russia struck first...half of their communication network would be destroyed but they could still get a message across. a highly robust network -- half the things could be knocked out and it would still... use the communications channels... and the guy who developed it said that the cold war was won by packet switching.

I think I'm getting off the track.

AK: Actually you're right on the track but I have a couple of quick technical questions...

E

SE ON

AK: What causes the expense of computer time? Is it the initial investment, of hardware, or paying people who produce the software?

SE: It's 90% in paying people to develop the software. That is where the expense really lies. That and the network storage. The central processing units -- computation and stuff-- is very cheaply achieved... but the method of storage, the manual disks, is still very expensive... In order to run something on an information retrieval system that's shared by a number of users, you have to buy not just computation but the storage and the backup and the protection and this kind of thing which is still an obstacle -- and appropriately it takes years to write a program that creates an information retrieval systems. We were lucky enough to bring it together...

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Then -- she said that the other reason computer time is so expensive is because IBM has the market lined up for a lot of people, so they set the standards--they're the only people who can repair their own machines.

E: People get used to shopping IBM...

E Then I asked about how information would be stored, and whether if it were on tape, all the tapes could be accessed at the same time...

E: Well, we're going to use disks.. These disks here, the advantage of disks on retrieval is that they work fast, compared to tape, because the tape goes from one end to one end. And the head on the disk can go back or forward, to get more stuff faster...

AK: Will all the disks be attached to the system at the same time?

SE: Well, now that depends... disks come in all sizes... little disks like this, or bigger ones... We're using a whole stack of disks, in a ... they're ~~fixk~~ fixed discs... so we have a very large amount of retrievable storage right now, and it will all be available all the time.

AK: It's one of those machines that looks like a corrugated round dome, or something... ?

SE: Yeah, except that those are the interchangeable kind...

This is the same idea, except it sits there and you can't change it, but it's read by several heads at once when we back stuff out of the system, items that are outdated or otherwise unhealthy (?) (inaudible) but the thing about the Community Memory system (henceforth CM) is that the information is kept locally and given a set of keywords ... The system involves putting out perhaps 20 other terminals. for the community and the information for each node is there -- it's not in any centralized facility, although it is accessible from other nodes..

AK: Have you made plans for how you're going to divide -- well, I should get the basic structural information -- is this going to be strictly for Berkeley, or is this going to be for the Bay Area... or ?

SE: The first .. the next ... step, I should say, ... is going to be in San Francisco. We wanted to put it out in San Francisco to give it a good test of a community, a diversified one, just to see if it would work...

I mean, Berkeley is a fairly information-rich community, where the people are very well-educated, and the experiment in Berkeley worked well, but we wanted to put it in a community that would be harder.

AK: Have you considered Walnut Creek?

SE: Sure... no, no kidding. I have relatives in Cupertino and people don't gather anywhere except in shopping malls... and we'd have to put them in shopping malls. Mostly the places we want to be is community organizations, community centers, there will be some in apartment houses,

~~and public~~ and public places like that... but mostly we're going to try to set up an association of people who will look after the terminals... maintain public access... be able perhaps to pool their resources to be able to buy some stuff...

AK: Time sequence?

A SE: I imagine that there will be some terminals out in the community by the end of this year.

And I do mean around Christmas time, not September...

AK: Are people going to buy the terminals from you, or are you going to keep them?

SE: Well, if they can afford them, they're welcome to... It's going to cost, probably, \$50-60,000 to put it in.

AK: Just to start?

E: As a start, yeah...

AK: That would involve one large facility and small terminals?

SE: Yeah, it involves one medium-sized computer and perhaps as many as 20 public terminals which will have a keyboard and screen probably... The detail of which will not be... final... a. They'll be subject to change and b. we've been keeping a low profile which we are going to maintain until we are closer to the time limit... consider all this as ~~xxxxxxx~~ confidential...

AK: Right. What I'm interested in ~~ixxxx~~ for this class piece is to give people what an open-access terminal would be like-- how the terminals would work, and what they would contain...

E: Oh, yeah... Well, our system, I can say, is open to any kind of use. It .. the use that it got before was people putting in bulletin board type things. But they also ~~xxxxxx~~ put in poetry, and messages calling readings together, and whatever. And then after a message is put in ~~anyxxxxxx~~ they add keywords indicating the content of the message... This is a feature that you don't always find on information retrieval systems. I have something that would convey this...

It's likely that the system would still be based on short messages...and it isn't a place where you'd go to read... you'd go to be pointed to...

AK: Are you going to have news services?

SE: We probably wouldn't subscribe to that kind of thing very much. We're going to try to encourage people to put it in first, to put in everything they know...

We're going to try to encourage all the information resources in the community... because there are people right now who are walking switchboards, you know...they know just about anything there is to know in the community... so we hope that information referral services in particular will make public availability of the system... will probably help them, too... because people can walk up and get the answer.

E

K

KE ON

Emerson -5-

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AK: When you experimented in Berkeley, what was the attraction of what you did for people who weren't interested in computers?

RE: I don't know. People did things like they seemed to get a kick out of playing with them... they liked the fact that their message would stay in there for a certain amount of time... and that they were going to get it immediately and they didn't have to look through a community bulletin board first... also you can add comments to a lot of them, so you can build up a dialogue... people could come along and add items to a whole cluster of other items... so there was a whole lot of control by the people over the data...

AK: In Berkeley did someone have to be manning the computer all the time?

SE: No. In fact, most of the time the terminals were not watched... There was a self-teaching system involving posters and the interaction of the computer itself... messages programmed into the screen... basically it would say, "Type in your message... You couldn't edit it once it was in."

AK: Oh, yeah. Most typesetting machines are like that...

RE: The new system is based on old CMP... We're going to protect the original information from being ~~xxxxxxx~~ changed when it is added onto... no censorship.

AK: Will people have to identify themselves?
That's one of the big questions about the large systems... especially those for home computers-- whatever you put into a system could be monitored...

SE: Oh, yeah... In our system there is no private files. Admission to users is, "Don't put it in if you don't want certain people to see it."
There is no way that privacy can be protected in the big systems... The National Security Administration can eavesdrop whenever it wants...
What we're ~~thinking~~ doing is an experiment which may change the way a national information utility is used. Really, we're not too concerned with the technology, but with the idea that people can manage their own information... and they don't have to go through some intermediary to get it.

AK: That's the point of view we want to take with the COEV piece.. there are a lot of models for national systems... some of them have a lot of interactions, some of them don't... some of them have open access some of them don't...

QUEE...

SE: Well, that we think QUEE is some sort of rip-off, really... The guy whose idea QUEE was, when asked why he didn't make it more interactive, he said, "You can't trust give people the CONTROLS TO A system to use when they don't know how to use it."

Dangerous indeed for the people to be able to talk back!

The idea of voting... you're not participating, you're voting on existing questions.

AK: That was one of my two reservations... The only other one was what about the people who can't afford personal computers or interactive terminals.

In Berkeley, was there any way of breaking down demographically the GMI users?

MAX SE.: No, we didn't have any way of ~~xx~~ getting the statistics on who used the terminals although it was pretty much people like us.. the way it turns out...

And we had a terminal in the Mission district... and that got used by a whole different set of people... the fact that it was in the library seemed to constrain its use a little bit...

The library didn't have as much of a free-form atmosphere as the Whole Earth Access Store...

E (Then we go into me talking of my projects... CoEv's next issue... access to other computer networks..)

... Village Design has existed for quite a while and has done various projects, of which GMI is one.. Most of its projects have involved various community information systems. (not computers.) but not strictly computer projects... We did networking between community-based organizations. So we're not just the mouthpiece for GMI

AK: How did you get involved in this?

SE: Through friends... An old friend of mine was involved with the project and she turned me on to it... and... at the time I was working as a community organizer for a federal health planning organization, and my background was in community health... and they needed somebody to update their mailing list...

We have a nucleus of 12 people -- 2 paid staffers...

AK: How do you get your money?

SE: Well, private donations. We have a number of sources. One of it represents royalties on the SOL terminal.

AK: Will all the terminals be limited to San Francisco city limits?

SE: Yeah.. we're not sure exactly which neighborhoods... They'll be fairly close together because of cost of connecting terminals together

ON AK: If someone wanted to use the system, it wouldn't cost them money, or is that not true?

SE: That is not true. We want the system to be self-supporting. We are therefore asking the community groups who wish to be involved to put some money into it. There will probably be a coin-box attached to the terminal (more)

Fee will not be very much -- but it should be enough to pay for the terminal. We are of course subsidizing the first and second terminal but we're hoping to franchise the rest.

AK: Were there coinboxes on the old CMP terminals?

SE: No, those were free.

Where were terminals? Leopold's Records
Vocations for xms Social Change, Whole Earth Access,
Mission Street Library. The two places it was used best
were Leopold's Records, where it became a musician's switchboard,
and the Access Store, where it became a computerized whole
earth catalog. Those were the places it got the best use
and we also tried *(wonderful)*
We're looking for places like grocery stores where there's
a lot of traffic.

end

7

I