The Amateur Computerist

"People need communication to represent themselves, and e-mail for that reason, as well as Netnews."
from a post at the San Francisco Public Library during the NTIA online conference, Nov. 14-21, 1994

Table of Contents

Will Access to the Net
Be a Privilege or a Right?

This issue of the *Amateur Computerist* is on the subject of Netizens and Online Access. The issue discusses both the cooperative online community and the effort to extend access to the online community. We have included articles about the development of the online Usenet community and about the challenges it faces. Also, this issue contains articles about efforts to extend access to the Net (to Usenet, e-mail and

a text based browser like lynx), to those who are not yet online but who want to contribute to the Net.

From the earliest days of networking developments, the vision guiding networking pioneers was of a computer utility that everyone would have access to. What is now becoming clear, however, is that for networking access to be ubiquitous it has to be available free or at its actual low cost (i.e. $4 to $8 per year per person). Such access should not be limited by geographical or income factors.

The right of all to have access to the Net is not only an important concern for the individuals involved, it is also a concern for those online who will benefit from the broadest participation of all and their contributions to the online community. Those who have to pay by the hour or by the amount of data they use, are limited in what they are able or willing to contribute. Also, commercial profit oriented access has led to abuse of Usenet. While those connecting from academic or community networking sites must often agree to act according to acceptable use policies which prohibit advertising, chain letters, pyramid schemes, etc, some commercial sites have been less willing to enforce acceptable use policies to prevent such abuse.

In August of last year, the Telecommunities '95 Conference was held in Victoria, British Columbia. The slogan of the conference was "Equity on the Internet." The conference set as a goal, access of all in Canada to Usenet and e-mail and local community information by the year 2000. The commitment was stressed at the conference that there was a need to protect the public online space. "Cyberspace *Is* public space.... We each have a RIGHT to be there," one of the speakers at the conference emphasized.

A similar sentiment had been expressed in the US in November, 1994 during the online public hearing held by the National Telecommunications Information Administration under the U.S. Department of Commerce. The online conference requested citizen input into what should be the future of the National Science Foundation (NSF) backbone to the Internet. Many participants at the online conference expressed the importance of having e-mail and Usenet access available for all and there was a concern that the so called "free market" policy of networking development would only exclude important sectors of U.S. society

from access to these important new communication resources.

In the early days of Usenet and the ARPAnet, there was an ARPAnet Mailing List known as Human-Nets. Those contributing to Human-Nets recognized the importance of their participation in a new form of communication. A goal of those on Human-Nets was to create a World-Net, a worldwide computer and communications network. Today that goal of a world-wide computer and communications network has become a goal within reach, but the question of how to make access to it available to all is still an unsolved public policy dilemma.

This issue of the *Amateur Computerist* is dedicated to examining some of the efforts to take up this pubic policy goal, by examining the creation of Cleveland Free-Net, reporting on the Community networking movement in Canada and including the Access For All FAQ sent to us from Germany. We hope this will provide a broader view of the issues involved in developing the Internet than the limited commercial view that dominates media attention in countries like the U.S. We also look at how the early days of Usenet took on the problem of having a democratic foundation as a basis for the creation of an ever growing and expanding online community. In addition, we have included articles in this issue about the potential of the Net to make direct democracy feasible and available.

Crucial to the health of not only the online community, but also the future of our society is the need to have the cooperative contributions to the Net. These are only possible by having a healthy social policy toward networking development and access. Though the U.S. government is not currently pursuing this goal, there is a broad sentiment within the U.S. and elsewhere that this is a crucial public policy issue and these voices need to find a way to influence public policy both on and off the Net.

[Editor's Note: The U.S. Telecommunications Act of 1996 was passed while this issue of the *Amateur Computerist* was going to press. The law ignores the Freenet and community networking movement and lacks any historical perspective of how the Net has developed and spread. For a future issue we invite comments on the new law and views about what it is necessary to do to influence what the U.S. government will do to

implement the universal service provisions of the new law.]

Canadian Community Networking Report From Telecommunities'95 Conference

by Jay Hauben
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Something big is happening in the world. There is rapid development and deployment of new technology making possible an incredibly inexpensive global communications system. This is a report about a grassroots effort across Canada that is attempting to insure participation in the development and use of this technology by community level people. The organization formed to coordinate this Canadian community network movement is called Telecommunities Canada.

In February, 1995, a conference announcement appeared on electronic mailing lists and Usenet newsgroups. It began, "Telecommunities Canada is pleased to extend an invitation to Free and Community Networks across Canada and around the world to attend the International Community Networking Conference and First Annual General Meeting of Telecommunities Canada." The announcement encouraged the widest possible attendance from participants in Freenets, Community Networks and other forms of electronic community based activities with the hope it would lead to the founding of an International Telecommunities Organization to encourage the development of community networking around the world. It also pointed to their vision of ubiquitous access to electronic communications for all Canadians by the year 2000.

The conference took place from Aug. 19–23, 1995 in Victoria, British Columbia. Over 300 people attended the four days of tutorials, speeches, concurrent sessions and a barbeque. Most of the participants were Canadians, but also present were community networking people

from the U.S., England, Australia, and a few other countries. Most of the more than 30 operating Canadian community networks were represented as were many of the 70 or so community networks that are in various stages of organization. Since the first Canadian community network, Victoria Free-Net, came online in November, 1992, over 200,000 Canadians or a little less than 1% of the Canadian population has gained free or very low cost access to the Net via such networks.

The conference sessions were for the most part serious and many pressing issues were discussed and debated. This report covers a few.

All Canadian community networks are staffed mostly by volunteers, sometimes numbering in the hundreds. Most of the work of figuring out, setting up and maintaining these networks is done by volunteers from the communities or cities involved. In fact, one of the major purposes of these community networks is to provide training for local community people in electronic communications technology and network management. In that way these communities hope they might participate in the development of advanced technology and their people could take jobs or participate in decisions which require such technical knowledge. Many of the students, people between jobs, librarians, and senior citizens who volunteer, do so with this purpose in mind. But how to maintain a sufficient pool of such volunteers was a question for many of the community networks. There was wide-spread sentiment that the volunteers had to be offered quality training and skill upgrade opportunities, especially those with more skills offering help to those with less. Also, some argued that care had to be taken to involve volunteers in all aspects of the network's decisions and operations both for the network's health and for retention of the volunteers. From what I heard at the conference, it seemed that concern for retaining volunteers would strengthen some community networks in their resolve not to allow any commercial activity on their networks lest the volunteers see that someone was profiting from their donated labor.

Even with most labor done by volunteers and most equipment donated as it was for some of the community networks, there are still ongoing costs to operate a community network. There was general experience throughout Canada that the actual operating cost amounts to about $8.00(U.S.) per member per year (mostly for phone line costs).

Even that small cost per member, for a community net like National Capital Free-Net in Ottawa with over 50,000 members necessitates an annual budget of over $400,000. Participants from the Blue Sky Community Network of Manitoba pointed out that $8.00 per year amounts to about 70 cents per month and therefore should be covered by the government which would save that much money just by making one less paper mailing per month to each online citizen. People from Edmonton FreeNet argued that it would not be unfair to charge each member a $10 to $20 annual membership fee as they do. Many others argued that even $10 per year might be a burden for some and that there should be no economic obstacle to anyone participating. Most Canadian community networks retain free access, covering their operating costs by voluntary donations from their users and other fund raising mechanisms. But the money question and the question of being sustainable seemed on everyone's agenda.

Speaking to the principles on which to base the money and other decisions, Garth Graham one of the theoreticians of the Canadian community network movement has written: "A community network is electronic public space where ordinary people can meet and converse about common concerns. Like parks, civic squares, sidewalks, wilderness, and the sea, it's an electronic commons shared by all, not a cyberspace shopping mall." To maintain their value as a public space, Canadian community networks have rules that their members and users agree to and can lose their accounts if they violate. Among the rules presented at the conference was an acceptable use policy in effect at some of the networks permitting: No corporate accounts, No advertising, and No overt buying and selling. Other nets represented at the conference have made openings for commercial use of their networks by establishing paid for higher levels of membership or sponsorship. But many worried that such duel level membership would compromise the public community essence of their networks.

One disappointment for the conferees was the failure to form an international organization or put in motion steps in that direction. The Canadian community network movement acknowledges its indebtedness to and respect for Cleveland Freenet and there had been strong efforts made to connect the Canadian community network and U.S. Freenet

movements. Telecommunities Canada had hoped to work closely with the U.S. National Public Telecommunications Network, known as the NPTN, which had up until recently represented many of the U.S. Freenets. During the conference, as an American I was asked often if I had worked with the NPTN. I explained the problems I had encountered with the NPTN. The Canadians listened politely but only at the end of the conference did I learn that the NPTN had trademarked the name Free-Net in Canada. The NPTN made it a condition of its participation in the conference that each Canadian community network pay the NPTN a $2000 membership fee. Telecommunities Canada offered to make a token payment in the name of all the Canadian community networks but the NPTN maintained that Canadian Freenets were using their trademark illegally and the negotiations toward an international organization ended. The result has been that a number of Canadian community networks have taken Freenet out of their names while others have offered each other legal support if the NPTN were to sue any of them over its use of the name Freenet. Many people at the conference warmly welcomed me and asked what they could do to help people in the U.S. move closer to having more community networks. It was as if the presence of non-Canadians helped keep the hope of an international organization alive.

Local content was presented by many as an important aspect of community networks. But it was reported that most users log-on in order to use e-mail or Usenet. This contradiction raised the question of what was the proper role for a community network. Garth Graham quoting another community network theoretician Jay Weston, phrased it this way: Are community networks "providing something for the community or caretakers of a space created by the community?" He argued at the conference that if community networks saw their role as providing something for the community, they had not gotten "beyond industrial society models of how to structure organizations" and therefore did not represent anything new and would soon be replaced by commercial service providers. If on the other hand they adopted the role of safeguarding a public space then community networks would be doing something unique and important. Community people need community networks to defend their right to access to the new communications technology at its actual cost. Jay Weston writes: "The National Capital Freenet was an

imagined public space, a dumb platform where all individuals, groups and organizations could represent themselves, where conflict and controversy could occur as manifestations of conflict and controversy already occurring in the community.... Such a space could be constructed only by the community acting as a community, and not by any public or private organization acting on behalf of the community." His argument is that the community must decide what is best for it. But who in the community has the answer? Everyone with a genuine interest in the community must be heard in order to figure that out. An open and diverse electronic public space is needed for that debate and discussion and that is what Usenet especially and e-mail allow for. I feel many people at the conference did not fully understand the important role that community networks play by making Usenet and e-mail available to their users.

In Canada as opposed to the U. S., there are stated policies of encouragement of community networks on the part of the Federal and some of the provincial governments. For example, the British Columbia Provincial government in a document called "The Electronic Highway Accord" states: "Community networks and public points of access are fundamental to affordable electronic access to services and broad community participation in the information society. A continuing commitment to involving the public in developing the electronic highway is essential." It is recognized in Canada that the private sector will not provide universal access at no or low cost to all Canadians. But most community network activists were frustrated by how little financial support had come so far from Canadian governments. The attendees at the conference took up an active debate with the government officials who had been sent to the conference. In most instances the government programs prescribe the form that a network should take in order to qualify for funding. The grassroots people fought to have a say in the whole process of defining, structuring, and deciding which projects would get government support. The Canadian Federal government has earmarked $20,000,000 over three years for rural connectivity to the Internet. Even those at the conference ready to give up on achieving government financial support, took up to argue with the government representatives why much of that money should end up supporting the

community networking movement and not business connectivity. The effort was to make the government live up to its mandate as the promoter of the general welfare rather than the provider of welfare for business interests. The end result at the conference was that the Federal government representatives asked the Telecommunities Canada organization to put a proposal on the table for the government to consider.

Whereas government support was hard to make concrete, libraries and librarians have played prominent parts in the community networks that have come online in Canada. Many of the community network efforts were initiated by librarians or library administrators. People whose profession was to facilitate access to information saw the advent of the Internet as a great leap forward and didn't want their local library users nor themselves left out. Also librarians realizing that they need network skills are among the volunteers in many community networks. Some library administrators also served as activists in the development of local community networks. A community network can be a mechanism by which a library's online catalog is available by dialup from homes without requiring the library itself to maintain the modem pool and computers that are necessary. Also, many community networks fulfill their obligation to have public access terminals by placing them in libraries. So a community network can save libraries a good deal of training effort, money and equipment costs and in Canada at least many community networks and libraries are close partners.

In most communities, libraries do not consider community networks competitors but relations in Canada between community networks and commercial service providers are a problem. The community network activists do not see themselves as competitive with the service providers. They argued that the community networks with their basic capabilities help to create customers for the commercial operations, introducing people to networking and whetting the appetites of those who will be willing to pay for higher level access. The service providers for their part often oppose the community networks as unfair competition. There are some service providers who have appeared helpful to the community networks in their areas. Some conference attendees warned, however that what appears as friendship in public is often the opposite behind

closed doors. Also Roger's cable company in Toronto is a major sponsor of the Toronto Free-Net, but the finances and decision process there I was told were not public in contrast to the normal practice in most other Canadian community networks. When I asked people at the conference what advice they would give to people who wanted to see a community network develop, I was often told to look into who had a successful community network, "Check out why National Capital Free-Net in Ottawa is successful." What I heard about National Capital Free-Net was that there had been a year long planning effort spearheaded by some faculty members from Carleton University who held meetings frequently for more than a year before launching their community network. That all decisions of importance are made in public with votes taken online on the FreeNet and that the annual meeting setting policy for the coming year is also online available to all and participated in by many.

I left the conference feeling that I had attended an important event. It was a public conference that had discussed many issues important to the successful operation of a community network. There were many differences among the Canadians but for now it seemed to me they had a genuine community network movement committed to safeguarding a public space. I felt we in the U.S. have a very big job if we too want to have the kind of universal free or very low cost access that the Canadians were aiming for. We here have yet to win government commitment to a role in support of public participation spreading access to the Internet. We have strong commercial interests who oppose any public sector activity, and we haven't even gained the kind of support from libraries and librarians that seemed so important in Canada. But I felt there were pioneers at work in Canada blazing the trail and wishing us well and they had given us a push to keep going despite or in spite of the difficulties.

Telecommunities Canada will hold its 1996 conference in Edmonton, Alberta on August 16-20. More information is available from:
    tc96info@freenet.edmonton.ab.ca

The Netizens and Community Networks

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[Editor's Note: The following article is from a talk presented at the Hypernetwork'95 Beppu Bay Conference in Oita Perfecture, Kyushu, Japan on Nov. 24, 1995 as part of the Netizens section of the Conference]

The story of Netizens is an important one, and I am happy to participate in a conference which acknowledges the value and role of Netizens in the future of the Net. In conducting research 3 years ago online to determine people's uses for the global computer communications network, I became aware that there was a new social institution, an electronic commons, developing. It was exciting to explore this new social institution. Others online shared this excitement. I discovered from those who wrote me that the people I was writing about were citizens of the Net, or Netizens.

At the age of 12 I had started using local BBSes in Michigan. That was in 1985. After seven years of participation on both local hobbyist-run computer bulletin boards systems, and global Usenet, I began to research Usenet and the Internet. I found these online discussions to be mentally invigorating and welcoming of thoughtful comments, questions and discussion. People were also friendly and considerate of others and their questions. This was a new environment for me. Little thoughtful conversation was encouraged in my high school. Since my daily life did not provide places and people to talk with about real issues and real world topics, I wondered why the online experience encouraged such discussions and consideration of others. Where did such a culture spring from, and how did it develop? During my sophomore year of college in 1992, I was curious to explore and better understand this new online

world.

As part of course work at Columbia University, I explored these questions. One professor's encouragement helped me to use Usenet and the Internet as places to conduct research. My research was actual participation in the online community by exploring how and why these communications forums functioned. I posed questions on Usenet, mailing lists and Free-Nets. Along with these questions, I attached some worthwhile preliminary research. People respected my questions and found the preliminary research helpful. The entire process was one of mutual respect and sharing of research and ideas. A real notion of 'community' and 'participation' took place. On the Net, people willingly help each other and work together to define and address issues important to them. These are often issues which the conventional media would never cover.

One response to my research came from a Netizen from Montreal, Jean-Francois Messier. He commented on how his connection to the world via the Internet changed how he viewed the world. He said, "...my attitudes to other peoples, races and religions changed, since I had more chances to talk with other peoples around the world. When first exchanging mail with people from Yellowknife, Yukon, I had a real strange feeling: Getting messages and chatting with people that far from me. I noticed around me that a lot of people have opinions and positions about politics that are for themselves, without knowing others." (See "The Net and The Netizens" in the Netizens Netbook)

He continued, "Because I have a much broader view of the world now, I changed and am more conciliate and peaceful with other people. Writing to someone you never saw, changes the way you write… Telecommunications opened the world to me and changed my visions of people and countries...." (ibid.)

My initial research concerned the origins and development of the global discussion forum Usenet. Usenet developed out of the desire of several graduate students in the United States to be part of a cooperative technological community across campuses. As campus connected to campus across state, across the nation, across the continent and then across continents, a global Usenet communication network emerged. People used Usenet because it is more powerful to be in a large

community than in isolation; communication with others leads to broader ideas and cooperative activity is more productive than competition. These principles emerged from the necessity of sharing knowledge to successfully implement new technology; at the time it was Unix. Much of the culture of open discussion and sharing of technical experience spilled over into the non-technical discussion groups. These basic principles were part of the evidence behind the discovery of Netizens.

For my next paper, I wanted to explore the larger Net, what it was and its significance. This is when my research uncovered the remaining details that helped me to recognize the emergence of Netizens. Netizens are the people who actively contribute online towards the development of the Net. These people understand the value of collective work and the communal aspects of public communications. These are the people who actively discuss and debate topics in a constructive manner, who e-mail answers to people and provide help to new-comers, who maintain FAQ files and other public information repositories, who maintain mailing lists, and so on. These are people who discuss the nature and role of this new communications medium. However, these are not all the people. Netizens are not just anyone who comes online, and they are especially not people who come online for isolated gain or profit. They are not people who come to the Net thinking it is a service. Rather they are people who understand it takes effort and action on each and everyone's part to make the Net a regenerative and vibrant community and resource. Netizens are people who decide to devote time and effort into making the Net, this new part of our world, a better place. Lurkers are not Netizens, and vanity home pages are not the work of Netizens. While lurking or trivial home pages do not harm the Net, they do not contribute either.

The term Netizen has spread widely. The genesis comes from net culture based on the original newsgroup naming conventions. Network wide Usenet groups included **net.general** for general discussion, **net.auto** for automobile owners, **net.bugs** for discussion of Unix bug reports, and so on. People who used Usenet would prefix things related to the online world with the word "net" similar to the newsgroup terminology. So there would be references to **net.gods**, **net.cops** or

net.citizens. My research demonstrated that there were people active as members of the network, which the term net citizen does not precisely represent. The word citizen suggests a geographic or national definition of social membership. The word Netizen reflects the new non-geographically based social membership. So I contracted the phrase net dot citizen to netizen.

Two general uses of the term netizen have developed. The first is a broad usage to refer to anyone who uses the Net, for whatever purpose. Thus, the term netizen has been prefixed in some uses with the adjectives good or bad. The second usage is closer to my understanding. This definition is used to describe people who care about Usenet and the bigger Net and work towards building the cooperative and collective nature which benefits the larger world. These are people who work towards developing the Net. In this second case, Netizen represents positive activity, and no adjective need be used. Both uses have spread from the online community appearing in newspapers, magazines, television, books and other offline media. As more and more people join the online community and contribute towards the nurturing of the Net and toward the development of a great shared social wealth, the ideas and values of Netizenship spread. But with the increasing commercialization and privatization of the Net, Netizenship is being challenged. During such a period it is valuable to look back at the pioneering vision that has helped make the Net possible and examine what lessons it provides.

References

 J. C. R. Licklider and Robert Taylor. "The Computer as a Communication Device." In *Science and Technology: For the Technical Man in Management*, No. 76, April 1968, Pp. 21-31.

The quote from Jean Francois Messier is from the Netizens Netbook, which this speech is adapted from.

The Netbook is available from:
 http://www.columbia.edu/~hauben/netbook/.

Letter to the Editor

Hi,

I want to use your newsletter to suggest to Apple and IBM and Compaq, etc. that they make an "economy model" computer for those of us with a limited income. I think it would be not only a great thing but also a best selling item worldwide. Lest we forget what the Volkswagen "Bug" did for its manufacturer as well as the West German economy. I hear they either brought it back or they are thinking about making an improved version. GMC, Ford and Chrysler ought to be working on something like that, instead of making and trying to sell $20,000 lemons!

Thanks for your help.

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Access For All FAQ

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[Editor's Note: The following Request For Comment was presented at the Interstanding Conference, Nov. 23-25, 1995 at the National Library, Tallinn, Estonia. We thank Wulf-Burkhard Goehmann for forwarding a copy of it.]

- RFC Draft 1.1 -

Q1: Access for All sounds great. What is it all about?
Q2: What are the concrete targets?
Q3: Why is it so important that everybody be on the Net?
Q4: What's the time frame?
Q5: Microsoft, Burda, Time-Warner, German Telekom, and all these other big companies also want access for all. What's the difference?
Q6: Are there already examples of Access for All?
Q7: If all these people come online, won't the lines be overloaded?
Q8: So the issue is first of all one of pricing and regulation, i.e. telecommunications policy. What models are there?
Q9: Access to the pipes is great, but what good is it if all the useful stuff I find there has a price tag attached? How about Access to Information?
Q10: What other problems are there to be solved?
Q11: Where does the Access for All movement start? What's the context?

Q1: Access for All sounds great. What is it all about?

A1: The Matrix has inherent potentials for empowerment of individuals and small groups. Historically it was invented by its users, as a huge experiment in ongoing collaboration in an open, distributed, non-hierarchical environment. It was an economy-free enclave based on non-proprietary technology where advertisements were prohibited by the Acceptable Use Policy and despised by its inhabitants.

Now, these Old Internet cultures are becoming marginal, while infrastructure-building capital takes over. An economy of desire meets money economy.

Technically the potentials for open information exchange and debate, shared creation and decision making, for an equality of voices are still there, but they will not manifest themselves automatically. Like anywhere else we will have to fight for our right to be on the Net, and to be there in a way we choose. Access for All is a grassroots movement

for bottom-up infrastructure building — technically, politically, artistically, socially.

Q2: What are the concrete targets?

A2: 1.) an open, distributed, heterogenous, packet-switched, two-way, many-to-many network in which everybody can write as well as read.
2.) ubiquitous, 24-hour, flat-rate access to the pipes at the fastest available speeds and at rates affordable to all.
3.) free access to all public information (analogous to the public library in the Gutenberg Age), freedom of speech and assembly, privacy and anonymity.
— We want it all, and we want it now!

Q3: Why is it so important that everybody be on the Net?

A3: The Matrix is turning into an educational, economic, political, social infrastructure; a communicational place where jobs are offered, civic and citizens' action is taken, kids do their class projects, government information on equitable opportunity programs is published, and public debate is conducted on just about anything somebody deems relevant. In such a world, anybody who is not present on the Net will be seriously disadvantaged.

In his keynote speech at the Telecom '95 in Geneva, Nelson Mandela argued that if the right to communications is understood as a basic human right, then the difference between the information saturated countries and the information have-nots has to be abolished.

Human rights are not granted, but have to be fought for. Also at Telecom '95, Peking correspondent Francis Deron pointed out how access restrictions are turning the Internet in China into another tool of the power elite. In capitalist countries, the danger is more one of trivializing the Matrix into a medium for teleshopping and video-on-demand.

Understood as a public sphere, the Matrix is not an issue of industrial policy, but of democracy. Not everybody has to be on the Net, but everybody, regardless of location, know-how, and income, has to

have the opportunity to be there. We're all stakeholders.

Q4: What's the time frame?

A4: This new platform for social intercourse is still in the process of formation. Within the next year or two many decisions will be taken that set the technical, economic, political, legal constraints within which the network cultures will grow. In order not to leave these decisions to experts lobbied by commercial interests, alternative, critical, artistic circles have to be made aware of these issues. Precondition for opinion-forming and participation is access to the Net. Solutions will be negotiated inside and around the Net. The most urgent issue today is to get the widest possible manyfold of perspectives to participate in this process, i.e. Access for All.

Q5: Microsoft, Burda, Time-Warner, German Telekom, and all these other big companies also want access for all. What's the difference?

A5: Those enterprises are, by nature, interested in their own and not in public benefit. The conglomerates of telephone, cable, publishing, broadcasting, entertainment, merchandising, and retail companies produce a particular vision of what the Net is, thereby marginalizing alternative usages. Their idea is one of TV with a minimal back-channel for polling and ordering.

"For example, executives from Time-Warner, Inc. are proudly showing a video about the 'Full Service Network' currently being tested in Orlando, Florida. The video shows happy suburban families using their set-top boxes to play games, watch movies, browse electronic magazines, and order pizzas and bedroom sets. This supposed 'Full Service Network' does not provide e-mail, bulletin-boards, or person-to-person communication of any kind.... without e-mail, discussion groups, or a means of entering text, the Time-Warner 'Full-Service Network' can't possibly support participatory democracy.... the dominant component on the Information Highway will be a highly commercial, top-down, 'pay-per' system for delivering infotainment to consumers, and, of course, taking their product orders. Most people won't even *know*

about alternative components, e.g., civic networks operated by non-profit organizations, much less subscribe to them." [Jeff Johnson (Computer Professionals for Social Responsibility)]

What the Fortune 500 want is a controllable, centrally planned and operated, unified network. They want set-top boxes as terminals not computers, closed front-end networks to the Internet (MSN, Europe Online) not straight Internet access. (not decided yet: Springer)

In contrast, the Internet as it evolved so far is a patchwork of heterogenous islands internetworked through the regional cooperation of the various operators, all with their own plant structures, clientele, funding, organization, philosophies, and cultures. Access for All builds on this diversity.

Another essential criterion for an open network that connects us rather than targeting us is that of "reciprocity of voices": in whichever format you can read information, you should also be able to create and provide your own. Therefore, tendencies that increase the division between professional information providers and a receive-only general audience have to be counteracted.

One way to do this is to put as much effort into advancing tools for social intercourse (newsgroups, mailing lists, IRC, MUDs) as we see being put into tools for information navigation (ftp, Gopher, WAIS, WWW). [Sproull & Faraj]

Access for All wants to do two things. First develop grassroots efforts for access that demonstrate that we do not depend on corporate offerings. And second, it wants to start a public debate about the significance of the Matrix as a public sphere, and about counteracting, e.g. by regulation, the additional empowerment of the corporations.

Q6: Are there already examples of Access for All?

A6: Yes, during the time when access to the Internet proper was still largely reserved for the academic world, BBSs provided community networking. Places like The WELL in San Francisco, the Cleveland FreeNet, or Coara in a small town on Japan's southern main island of Kyushu grew into geographically and thematically focused digital public spheres. They spawned similar networks in other cities, and were finally

gatewayed to the Internet at large.

Today, even in the tightly regulated telecom landscape of Germany, alternative access models are coming up. The rooms in some student dormitories are connected to the university LAN directly. An apartment block in the federal state of Turinga uses the existing CATV system to run IP. The city council of Münster decided to bring the town online, offering free dial-in points and terminals at cafes and libraries. A final example is Prenzelnet. The name is derived from Prenzlauer Berg, the squatters', students', and artists' ward in Berlin. Here a house will be wired with an Ethernet from the cafe on the ground floor up to the last bathroom where people might want to read online magazines. It will be a model house with a cheap and dirty, but scalable network that can be expanded to the whole neighborhood. The main cost advantage of these models lies in circumventing the monopoly-priced Telekom lines, in doing local access not over phone lines but own lines. The other main point of local initiatives taking networking in their own hands is that the systems grow out of the needs of a community, not out of commercial considerations.

Local online communities provide a sense of affiliation, a shared history. They turn information into meaning by placing it into a social context. They allow for face-to-face checks, local sharing of resources (scanners, printers, CD-ROM burners), and encourage self-help. Local islands serve as ideal community front-ends to the Matrix at large, following the WELL's motto "Think global, act local."

Q7: If all these people come online, won't the lines be overloaded?

A7: New technologies are becoming available for digital transmission on any channel and any part of the electromagnetic spectrum. Even good old copper wire, the most extensive existing network on the planet, can now be turned into broadband infrastructure. Recently, there was a report that 52Mbps communications will be possible using copper wire. [GLOCOM] ATM over copper wires provides hundreds of leased-line quality virtual channels.

Also current CATV, with minimal capital investment for changing broadcast architectures into two-way systems, can be turned into a

cheap, high-speed local loop. Continental Cablevision and PSI offer 24-hour high-speed Internet access at $125/month. In Tokyo, three CATV companies announced telephony inside their cable islands at a flat rate of $20/month.

Once deregulation makes it possible, extensive optical fiber lines installed for internal use by local administrations, by railway and electricity companies and the like will become generally available.

A wide range of wireless technologies from packet radio to microwave links, from infrared to laser are becoming technically feasible. These are especially attractive where there is no wire plant in place.

A more exotic technology is the modulation of electricity lines (Baby Phone).

One does not have to be a utopian to envision a time when bandwidth is abundant, and connectivity is ubiquitous and cheap, just like electricity and water today.

Technically, there are no problems, only a wealth of solutions.

Q8: So the issue is first of all one of pricing and regulation, i.e. telecommunications policy. What models are there?

A8: There is a range of models from grassroots cooperatives (Prenzelnet), via funding by sponsorship and donations (dds), to government subsidies (Münster), and regular for-profit companies (The WELL).

Networks afford immense economies of scale. For example, in 1993 the NSF financed its backbone at $1 per user per year [MacKie-Mason & Varian, 273]. On the local level, Harvard University with 12,000 users pays $4 per user per year for its connectivity. [Kahin, 12] The same advantage of large institutions can also be achieved by buyers cooperatives of individual users that purchase bulk connectivity at favorable conditions (like Individual Networks).

Public ownership, subsidies, and tax incentives should be part of the access structure, at the very least to assist disadvantaged sectors of the population, providing access through institutions such as libraries, schools, and town halls. In the U.S., the National Telecommunications

and Information Infrastructure Assistance Program offered $64 million in fiscal year 1995 in matching funds for projects in education, community networking, health care, and public libraries. [Kahin, 15] Some U.S. states linked the deregulation of telecommunications to the establishment of a universal service fund into which the commercial service providers have to pay contributions. [Civille, 196]

Finally we could imagine a radical departure from the American market model. Today, former telecommunications monopolies are faced with two incongruous demands. On the one hand, they have to compete in certain areas like any other profit-making corporation. On the other, they are still legally obliged to provide universal service. The struggles between the New Common Carriers (NCCs) and NTT in Japan, and the German Telekom's decision to raise local call rates are resulting from this contradictory situation. The latter is, in fact, a way to have German Telekom's competitiveness subsidized by customers who were not asked and do not have a choice.

An obvious solution would be to split the telco into a truly competitive company and a nonprofit organization. The latter could be based on a common pool of resources and funds. The former public telco brings in its physical plant, the NCCs their backbones. Operating and investment funds would come from contributions of the value-added carriers, the commercial content providers and network marketeers, and the public hand. Mainly those who profit from the Net financially would bear the cost. This could also be achieved by a tax on monetary transactions over the Net. The pipes would be considered common good and provided for free.

Economically, one could argue that as a precondition of any online market, connectivity itself should be excluded from market forces.

Politically, one could draw an analogy to other common goods. In order to vote, to go to school or a library, to go window shopping, or meet friends at a public square I do not have to pay.

Socially, a truly universal, equal and equitable access for all requires a national and international meta-structure that addresses the disparity between metropolitan centers and rural areas, and between rich and poor countries.

In an interpretation of Nelson Mandela's right to communications,

societies could proclaim a basic human right to be online.

Q9: Access to the pipes is great, but what good is it if all the useful stuff I find there has a price tag attached? How about Access to Information?

A9: This is the crucial question to be addressed after access to the pipes. An obvious model here is the public library. In the spirit of the Enlightenment, nations have taken the decision that all published information should be accessible to everybody at no cost — a very radical decision indeed. A debate should be started on how this value of access to information translates into the Matrix.

Q10: What other problems are there to be solved?

A10: Lots. As a continuum from private sphere to public sphere, the Matrix has a range of requirements from privacy, security, and anonymity, to freedom of speech and — since the Matrix is a Third Place where people can actually meet — also freedom of assembly. Related issues concern censorship, access by minors, intellectual property rights, fair use, and non-representational models of democratic decision making.

A current problem that we heard about from Marleen Sticker is the attempt to hold access providers liable for the content of their customers. The concept of "common carriage," wherein transporters have no control over — and no stake in — what is transmitted to whom is endangered.

Answers to these questions will emerge from debates in the old media, and through established societal channels like Non-Governmental Organizations (NGOs) lobbying activities (EFF). But the discussions can only be substantial if they are based on first-hand experience, i.e. if they are also led on the Net. Therefore the primary meta-goal is Access for All.

Q11: Where does the Access for All movement start? What's the context?

A11: Access for All starts from existing crystallization points (dds, is,

Prenzelnet, Zamir Network and Electronic Witches in former Yugoslavia). By simply pooling these models, presenting them together, and foregrounding Access for All, the issue will become visible for the first time.

The result could be a collection of pointers to Access for All projects, of fact-sheets about the different approaches and technical implementations, diary-style scenes from the local online cultures, policy statements of these communities. Furthermore, forces can be joined to help bootstrap other projects by sharing experiences, software, know-how, and money (like the International City Federation). Operating projects could adopt sister communities in other countries.

As a movement Access for All could be a contribution to the Internet World Expo 1996, initiated by Carl Malamud after the example of 19th century industrial world fairs. Among many fancy, advanced projects showcased there, Access for All could be a bottom-up, trans-European counterpoint.

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[Editor's Note: The above RFC on Access for All is a request for comment. We welcome the article and felt it added a broad and helpful perspective to the question of why universal access to the Net is such an important social goal. However, previous issues of the *Amateur Computerist* have documented the history of the origins and development of the ARPAnet and the Internet. The past history demonstrates that through government support for research into new technologies and through government regulations like the Acceptable Use Policy (AUP) that guided the development of the ARPAnet and Internet, there was the needed support and direction for the technological development that made the Net possible. In a similar way, Unix was developed at Bell Labs as a research arm of the regulated AT&T. The RFC suggests that deregulation will lead to the development of new technologies, while the history of the development of the Net shows that enlightened regulation is needed, not deregulation.]

The article "John Kemeny: BASIC and DTSS: Everyone a Programmer" (*Amateur Computerist* Vol 5 no 1-2) was recently reprinted in the book *Computer Pioneers*, edited by John A. N. Lee and published by the IEEE Computer Society Press.

Online Public Discussion
and the Future of Democracy

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[Editor's Note: The following article is also included in Telecommunities '95 Conference Proceedings, Victoria, BC, August, 1995]

"What democracy requires is public debate, and not information. Of course, it needs information, too, but the kind of information it needs can be generated only by vigorous popular debate. We do not know what we need to know until we ask the right questions, and we can identify the right questions only by subjecting our own ideas about the world to the test of public controversy." — Christopher Lasch, "Journalism, Publicity, and the Lost Art of Argument."

"Throughout American history, the town meeting has been the premier, and often the only, example of a direct democracy.... The issue of whether the town meeting can be redesigned to empower ordinary citizens, as it was intended to do, is of vital concern for the future." — Jeffrey B. Abramson, "Electronic Town Meetings: Proposals for Democracy's Future."

Introduction

Democracy, or rule by the people, is by definition a popular form of government. Writers throughout the ages have thought about democracy, and understood the limitations imposed by various factors. Today, computer communications networks, such as the Internet, are technical innovations which make moving towards a true participatory democracy more realistic.

James Mill, a political theorist from the early nineteenth century, and the father of John Stuart Mill, wrote about democracy in his 1825 essay on "Government" for that years Supplement for the *Encyclopedia Britannica*. Mill argues that democracy is the only governmental form that is fair to the society as a whole. Although he does not trust

Page 26

representative government, he ends up advocating it. But he warns of its dangers, "Whenever the powers of Government are placed in any hands other than those of the community, whether those of one man, of a few, or of several, those principles of human nature which imply that Government is at all necessary, imply that those persons will make use of them to defeat the very end for which Government exists."[1]

Democracy is a desirable form of government, but Mill found it to be impossible to maintain. Mill lists two practical obstacles in his essay. First, he finds it impossible for the whole people to assemble to perform the duties of government. Citizens would have to leave their normal jobs on a regular basis to help govern the community. Second, Mill argues that an assembled body of differing interests would find it impossible to come to any agreements. Mill speaks to this point in his essay, "In an assembly, every thing must be done by speaking and assenting. But where the assembly is numerous, so many persons desire to speak, and feelings, by mutual inflammation, become so violent, that calm and effectual deliberation is impossible."[2]

In lieu of participatory democracies, republics have arisen as the actual form of government. Mill recognizes that an elected body of representatives serves to facilitate the role of governing society in the interests of the body politic. However, that representative body needs to be overseen so as to not abuse its powers. Mill writes, "That whether Government is entrusted to one or a few, they have not only motives opposite to those ends, but motives which will carry them, if unchecked, to inflict the greatest evils...."[3] A more recent scholar, the late Professor Christopher Lasch of the University of Rochester, also had qualms with representative government. In his essay, "Journalism, Publicity, and the Lost Art of Argument,"[4] Lasch argued that any form of democracy requires discourse and debate to function properly. His article is critical of modern journalism failing in its role as a public forum to help raise the needed questions of our society. Lasch recommended the recreation of direct democracy when he wrote,

"Instead of dismissing direct democracy as irrelevant to modern conditions, we need to recreate it on a large scale. And from this point of view, the press serves as the equivalent of the town meeting."[5]

But the traditional town meeting had its limitations. Everyone

should be allowed to speak, as long as they share a genuine common interest in the well-being of the whole community, rather than in any particular part. One scholar wrote that a "well-known study of a surviving small Vermont town meeting traces the breaking apart of the deliberative ideal once developers catering to tourism bought property in a farming community; the farmers and developers had such opposed interests about zoning ordinances that debate collapsed into angry shouting matches."[6]

The twenty-six year development of the Internet (starting in 1969) and the sixteen year development of Usenet (starting in 1979) is an investment in a strong force toward making direct democracy a reality. Mill's observations of the obstacles preventing the implementation of direct democracy have a chance of being overcome using these new technologies. Online communication forums also make possible Lasch's desire to see the discussion necessary to identify today's fundamental questions. Mill could not foresee the successful assembly of the body politic in person at one time. The Net[7] allows for a meeting which takes place on each person's own time, rather than all at one time. Usenet newsgroups are discussion forums where questions are raised, and people can leave comments when convenient, rather than at a particular time and at a particular place. With computer discussion forums, individuals can connect from their own computers, or from publicly accessible computers across the nation to participate in a particular debate. The discussion takes place in one concrete time and place, while the discussants can be dispersed. Current Usenet newsgroups and mailing lists prove that citizens can both do their daily jobs and participate in discussions that interest them on their schedules.

Mill's second observation was that people would not be able to communicate peacefully after assembling. Online discussions do not have the same characteristics as in-person meetings. As people connect to the discussion forum when they wish, and when they have time, they can be thoughtful in their responses to the discussion. In a traditional meeting, participants have to think quickly to respond. In addition, online discussions allow everyone to have a say, whereas finite length meetings only allow a certain number of people to have their say. Online meetings allow everyone to contribute their thoughts in a message,

which is then accessible to whomever else is reading and participating in the discussion.

These new communication technologies hold the potential for the implementation of direct democracy in a country as long as the necessary computer and communications infrastructure are installed. Future advancement towards a more responsible government is possible with these new technologies. While the future is discussed and planned for, it will also be possible to use these technologies to assist in citizen participation in government. Netizens[8] are watching various government institutions on various newsgroups and mailing lists throughout the global computer communications network. People's thoughts about and criticisms of their respective governments are being aired on the currently uncensored networks.

These networks can revitalize the concept of a democratic "Town Meeting" via online communication and discussion. Discussions involve people interacting with others while voting only involves the isolated thoughts of an individual on an issue, and then his or her acting on those thoughts in a private vote. In society where people live together, it is important for people to communicate with each other about their situations to best understand the world from the broadest possible viewpoint.

Public and open discussions and debates are grass-roots, bottom-up situations which enable people to participate in democracy with enthusiasm and interest more so than the current system of secret ballots allows. Of course, at some point or other, votes might be taken, but only after time has been given to air an issue in the commons.

The NTIA Virtual Conference

A recent example and prototype of this public and open discussion was the Virtual Conference on Universal Service and Open Access to the Telecommunications Network in late November 1994. The National Telecommunications and Information Administration (NTIA)[9], a branch of the U.S. Department of Commerce sponsored this e-mail and news-group conference and encouraged a few public access sites to allow broad-based discussion. Several public libraries across the nation provided the most visible public sites on the archives of the conference.

This NTIA online conference is an example of an online "town meeting." This prototype of what the technology facilitates also demonstrated some of the problems inherent in non-moderated computer communication. The NTIA conference was a new social form made possible by the net and actually occurred as a prototype of one form of citizen online discussion. It demonstrated an example of citizen-government interaction through citizen debate over important public questions held in a public forum with the support of public institutions. This is a viable attempt to revitalize the democratic definition of government of and by the people. This particular two-week forum displayed the following points:

1) Public debate and its release of usually unheard voices.
2) A new form of politics involving the people in the real questions of society.
3) The clarification of a public question in public.
4) The testing of new technological means to move society forward.

David J. Barram, the Deputy Secretary of the U.S. Department of Commerce, closed the NTIA's Virtual Conference on Universal and Service and Open Access by stating the conference was: "...a tremendous example of how our information infrastructure can allow greater citizen participation in the development of government policies."

To hear such a comment from a government representative is important. Such a statement indicates that many users of the Net have demonstrated to the U.S. Federal Government that they oppose the recent conversion of the communications-based Internet into the commerce-based National Information Infrastructure.

The goals of the two week conference, as stated in the Welcoming Statement, also by David Barram, were as follows:

1) Garner opinions and views on universal telecommunications service that may shape the legislative and regulatory debate.
2) Demonstrate how networking technology can broaden participation in the development of government policies, specifically, universal service telecommunications policy.
3) Illustrate the potential for using the NII to create an electronic commons.
4) Create a network of individuals and institutions that will continue the

dialog started by the conference, once the formal sponsorship is over.

The Welcoming Statement also highlighted the importance placed in the active two-way process of communication by ending, "This conference is an experiment in a new form of dialogue among citizens and with their government. The conference is not a one-way, top down approach, it is a conversation. It holds the promise of reworking the compact between citizens and their government."

Open discussion is powerful. Such exchange is much more convincing then any propaganda. The forums on *Availability and Affordability* and *Redefining Universal Service and Open Access* demonstrated that the solution of the so-called "free market" is not a correct solution for the problem of spreading network access to all. Voices otherwise unheard sounded loud and clear; there is a strong need for government to assure that online access is equally available to urban, rural, disabled or poor citizens and to everyone else. The government must step in to cover non-profitable situations that the so-called "free market" would not touch. Non-governmental and non-profit organizations along with community representatives, college students, normal everyday people and others made this clear in their contributions to the discussion. The NTIA Virtual Conference was not advertised broadly enough, but the organizers did establish 80 public access points across the U.S. in places like public libraries and community centers. This helped to include the opinions of people in the discussion who might not have been heard otherwise.

Conclusion

That the NTIA conference was online meant that many more points of view were heard than is normal. Prominent trade-off concerns were that of so-called economic development versus universal service and "free market" versus government regulation. Another issue which was brought up was the importance of understanding that the NII will be an extension of the Internet and not something completely new. As such, it is important to acknowledge the origin and significance of the Internet, and to properly study and understand the contribution the current global computer communications network represents for society. The last concern to point out was the hope that the government would be helpful

to society at large in providing access to these networks to all who would desire this access.

Despite the sentiments expressed during the NTIA conference in November, the NSFnet (National Science Foundation Network) was put to death quietly on May 1, 1995. Users heard about the shut down indirectly. Universities and other providers who depended on the NSFnet might have reported service disruptions the week or two before while they re-established their network providers and routing tables. No larger announcements were made about the transfer from a publicly subsidized U.S. Internet backbone to a commercial backbone. The switch signaled a change in priorities of what the Internet will be used for. May 1, 1995 was also the opening date of a national electronic open meeting sponsored by the U.S. government on "People and their Governments in the Information Age." Apparently the U.S. government was sponsoring this online meeting from various public access sites, and paying commercial providers in the process. Something is deeply ironic in this government-decided change to increase government expenses.

But also, on May 1, 1995, there was a presentation at a branch of the New York Public Library which focused on the value of the Internet and Usenet as a cooperative network where people could air their individual voices and connect up with people around the world. The Internet and Usenet have been networks where new voices were heard and the more established voices of society would not be overwhelming. This May First, traditionally a people's holiday around the world, the domain of the commons was sadly opened up to the commercial world. But the commercial world already has a strong hold on all other broadcast media, and these media have become of little or no value. The Internet has been a social treasure for people in the U.S.A. and around the world. It is important to value this treasure and protect it from commercial interests. As such, this move by the U.S. government is disappointing, especially considering the testimony presented by many Internet and Usenet users who participated in the November 1994 NTIA Virtual Conference on Universal Service and Open Access to the Telecommunications Network.[10]

In order to make any socially useful policy concerning the National Information Infrastructure (NII), it is necessary to bring the greatest

possible number of people into the process of discussion and debate.[11] The NTIA online conference is a prototype of possible future online meetings leading to direct democracy. There are several steps that need to be taken for the online media to function for a direct democracy. First, of all, it would be necessary to make access easily available, including establishing permanent public Internet access computer locations throughout the country along with local phone numbers to allow citizens to connect their personal computers to the Net. Secondly, it is wrong to encourage people to participate in online discussions about government, and then ask them to pay for that participation. Rather, it would be important to be able to figure out some system of paying people who participate in their government. Payment for participation is not an easy issue to decide, but it is a necessary step forward in order to facilitate more participation by people.

The archives of the NTIA *avail* forum and the NTIA *redefus* forum make for very important reading. It would be valuable if they were available in print form and available to those involved with policy decisions on the NII and for people around the U.S.A. and world who are interested in the future of the Net. This virtual conference was an important landmark in the study towards the development of the NII. However, it should not only stand only as a landmark, rather it should set a precedent for future conferences which could serve as the basis of a new social contract between the American people and government.

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5. ibid., p. 89.

6. Jeffrey B. Abramson's "Electronic Town Meetings: Proposals for Democracy's Future," prepared for the Aspen Institute Communications and Society Program.

7. The Net being: the Internet, Usenet news, Mailing Lists, etc.

8. Netizens are Net Citizens. See the URL:
http://www.columbia.edu/~hauben/text/WhatIsNetizen.html

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Old Freedoms and New Technologies: The Evolution of Community Networking

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This paper, with only minor variations, was delivered as a talk at the FREE SPEECH AND PRIVACY IN THE INFORMATION AGE Symposium, University of Waterloo, Canada, November 26, 1994.

North American society has had a lot to say on the distributed public media that we call the Internet, or simply the Net. And, in the past year or so, we have started to have a lot to say about what we've been saying. However, we haven't quite heard what we've been saying. We haven't heard because we are inexperienced in listening to each other this way. We are listening to the wrong things. Or, as Karl Popper once put it, we have been "like my dog, staring at my finger when I point to the door."[1] But, we can be forgiven for our misplaced attention to the Net.

Since it was first observed that there just was not enough available bandwidth to let everybody send smoke signals or bang drums, we've been organizing and reorganizing to determine who would, and who would not, get their hands on the blankets and the drums — and the presses, the microphones, and the cameras. As we moved through a few millennia, successive public communication technologies either began as, or very quickly were made to conform to, the extreme send: receive imbalances that, somewhere along the line, we started calling the mass

media, or simply the media.

It would be pedantic in the extreme to do more than note that these access restrictions now define all of the social relations of modern societies. Whole disciplines are organized around the understanding that all public and private institutions, all local and external spaces are bent by the constricted and compressed discourses of the mass media. Whether the analyses are celebratory or critical, whether their mass media interdependencies are made explicit or not, all analyses of modern society take the access constraints of the mass media as immutable. Public access to these media is simply not problematical. On the one hand, there are the media and, on the other, there are their audiences, consumers, constituents, and publics.

Until very recently, there was no reason to imagine that questions would ever have to be asked about societies with abundant access to the means of media production, exhibition, distribution, and reproduction of cultural offerings. Suddenly, it is time to start imagining the questions. That is what the Internet is about.

Some usually astute observers, among them Internet Society President Vinton Cerf and Microsoft CEO Bill Gates, are predicting that the twenty million now on the Net is only the beginning. Cerf predicts 100 million by 1998[2] and Gates, in a recent interview, confided that his big mistake so far had been in underestimating the importance of the Internet.[3] If they are right, if the hordes are going to start beating their drums in public, absolutely everything about the existing social order is about to be challenged. Not simply the mass media institutions, but all institutions. Everything is at stake. [If they are wrong, if the Internet is only the latest gizmology, then there is nothing to get intellectually excited about. We've been there before. For, as exciting or as terrifying as the prospect of a tiny 500 channel universe may be, it is just mass media business as usual, albeit new and unusual business.]

Whether or not there will be 100 million or so people on the Internet by 1998 or so, will depend first, upon whether they want to be there and secondly, if they do, who will likely be trying to stop them, why will they be trying to stop them, and how will they be trying to stop them.

As to the question of whether they will want to be, the Internet growth figures are familiar to us all. Steeply up to the right and getting

steeper. This should be more than enough evidence that, given a chance, people are eager to be there. Curiously, this inconceivable growth has occurred despite the equally familiar observations that the Internet is difficult to access, hard to use, slow to respond and, what is mostly to be found there is banal or otherwise offensive, and hopelessly disorganized.

This apparent contradiction of millions actively embracing cyberjunk cannot be resolved within the vocabulary of the mass media with their well-organized, familiar, marvelously honed content packages, that are so quickly and effortlessly available. Dismissive statements about the potential of the Internet that are based on the quality and delivery of content, cannot be resolved by debates about whether such statements are accurate or inaccurate. For some, judging the Internet by its content, the quality of its information, and the accuracy of its databases, is relevant and for others it is not.

For those for whom it is not, the Internet is less about information or content, and more about relations. For the mass media, it is always just the opposite. The mass media are almost pure content, the relationship a rigidly frozen non-transaction, that insulates the few content producers or information providers from their audiences. This is how we experience and understand the mass media. If it were not so, we would not call them the mass media. Five hundred or 5,000 more un-switched, asymmetrical, "smart" channels will not change that.

It is, on the other hand, impossible to understand much about the Internet's appeal by analyzing its content. The Internet is mostly about people finding their voice, speaking for themselves in a public way, and the content that carries this new relationship is of separate, even secondary, importance. The Internet is about people saying "Here I am and there you are." Even the expression of disagreement and hostility, the "flames" as they are called, at least says "You exist. I may disagree with you, or even dislike you, but you do exist." Mass media do not confirm existence, and cannot. The market audience exists, but the reader, listener or viewer does not.[4]

This is not to argue that the content of the Internet is irrelevant. The content defines the relationship. People not only want to represent themselves, they ordinarily want to present themselves as well as they can. It would be cynical in the extreme to devalue these representations,

the texts, the exhibited cultural products of tens of millions. It is rather to argue that the relational aspects of the transactions qualify and define the content in ways that need to be understood if the Internet it to be comprehended.

Whatever the reason for millions speaking publicly, this condition was not part of the mass media problematic. It is unreasonable to think that merely tinkering with paradigms grounded in technologies of restricted access will permit a rich interrogation of the range of social relations provided for by technologies of unrestricted access.

This call for a vocabulary that directly addresses the centrality of distributed public media is not a suggestion that paradigms that centrally situate mass media are somehow of less importance than they once were. If anything, their questions of access, production and representation are more critical, and even more challenging, than they were before distributed media raised the complexity of social relations. However, an expanded universe of mass media discourse that merely attempts to overlay distributed public networks upon the structured relationships of a mass mediated society, will lead us to misunderstand a society evolving with distributed public media.

It is well-understood that, all social institutions have their relative certainties made possible by the centralizing power of the technologies of mass communication. The relative certainties that accompany attenuated access to the means of symbolic production is welded into the fabric of all institutional policies and practices. Assuming, then, that access to the means of cultural expression will be increasingly distributed, it follows that all of the institutions of modern society will be threatened or at least inconvenienced by this development. While expressions like "public involvement," and "participative democracy," are imbedded in our rhetorical traditions, their unquestionable acceptability has always been conditional upon their equally unquestionable non-attainability. The technologies of mass communication always ensured that involvement and participation would not be overdone.

When the institutions that rose to power in the wake of the industrial revolution began to speak of the "information revolution," they only meant to digitize the modern industrial state. This non-revolution was Phase II of the old boys' operation, another remodeling of the modern

apparatus. The "Information Highway" is the updated codeword for the modern retrofit. This was not supposed to be about a technological adventure that would reconfigure social relations or blur the well-constructed boundaries between the public and the private ground. This was supposed to be about a five hundred, not a one hundred million channel universe.

The becoming Internet, this decentered polity, is an accident that happens to expand the locus of direct, self-mediated, daily political involvement. Those who previously had to make themselves presentable to the agencies of mass communication technologies in order to be represented by the technologies, have begun to publicly represent themselves. What was previously local, domestic, idiosyncratic and private can, for the first time, become external and public. This is an abrupt reversal of the mass media's progressive appropriation of the idiosyncratic and private for their own institutional purposes.

Since this reversal was unimaginable, no contingency plans had been imagined for dealing with it. But, to the extent that the expansion of the public ground challenges become identified for any segment of the established order, these challenges will be met. It is axiomatic that the Internet and, by extension, public community networks can expect massive pressure to diminish or eliminate the identified destabalizing influences that these distributed media exert. If the Internet, with its changed relations of production and related exigencies, is signaling a coming Accidental Revolution, the contests and the casualties will be enormous.

This symposium is about the skirmishes, battles and wars that have already started. All of these encounters are around the legitimacy of public self-expression, assembly, examination and privacy. These are the problematic of distributed public media, not of the mass media. Beyond our noting that they were lamentably unimportant, the concerns relating to freedom of speech were not central to a mass mediated society. Our familiarity with freedom of speech was almost entirely abstracted from the mass media accounts of their own experiences and the performances of their own legal departments. The mass media tested the limits of those freedoms for the speechless public.

We are now in the beginning stages of defining the legitimacy of

self-expression for ourselves. This represents a new set of concerns about the circumstance and substance of distributed media texts in all of their modes, the bases upon how it comes to happen that people 'speak' publicly, and what it is that they 'say.' The idea of 'assembly' and how it will happen that groups come to occupy territory and how they are distributed globally and locally assumes original importance, as decisions get made about what 'virtual communities' will be, and where they will situate. The privacy puzzles about the availability and use of all those sophisticated watching, listening, storing, sifting and intrusive devices are a humbling reminder of just how much our reach has exceeded our understanding of these technologies. How these matters are resolved will shape the distributed media and decide their social relevance.

Community networks are contributing a broader distribution of voices as these puzzles begin to get worked out on the distributed media themselves, rather than only in the exclusive enclaves of special interests. This must continue and expand or the awakening of self-representation will be short lived. It would be wise to assume that there are not yet any 'rights,' or that the old freedoms that were often hard won by the mass media, are now enshrined and will automatically transfer to distributed public media.

Situating Community Networks

If, as Bruce Sterling observed in the Afterward to his earlier work *The Hacker Crackdown*, "Three years in cyberspace is like thirty years anyplace real"[5] and, as events from thirty years past are often dimmed or forgotten, I hope you can forgive me for reminding you this morning that way back in November, 1991 the Canadian public had no access to the Internet. Moreover, there were no signs that the public would have any access.

The steepness, even then, of that now overly familiar Internet growth curve was entirely attributable to new users from within their formal institutional settings. The universities, research institutes of the telecommunication giants, and a few government departments had the Internet as their private preserve and tightly controlled access to it, often denying entry to even their own.[6] This control existed, even although the

administration of these institutions were still marvelously unaware of what was going on in their basements. Though unintentional, the Internet was still a well-kept secret, its threat to the status quo still largely unrecognized.

The commercial online services were busily avoiding the Internet, still building the firewalls around their own proprietary networks. Their fees were so high, and their services so meager, that they were providing little incentive for the general public to even begin to experiment with their narrow networking offerings.

The recurring telco dream of local metered service was a constant reminder that the Canadian public might never experience the Internet. Failure of poorly conceived commercial network services like Bell Canada's "Alex" and Australia Telecom's "Discovery" had convinced the telcos that not even the business community was ready for network services.

The Canadian Network for the Advancement of Research, Industry and Education (CANARIE), as its name implied, betrayed no awareness that there might be people in this country. Even by the end of 1992 when CANARIE released its business and marketing plans, the hundreds of written pages devoted to its vision made almost no reference to the Internet, and carefully avoided the 'public' as serious participants in what the partners had in mind for the country.[7]

These are but a few isolated examples of the evidence that the Internet had either not yet penetrated the collective institutional consciousness or was enjoying a brief period of benign neglect. For those who had experienced the Internet and begun to internalize even a small amount of what was happening, the general inattention seemed amazing, even eerie.

One thing was very clear. With no public or private restrictive policies in place, if there was ever a brief moment when it might be possible to unleash the Internet in Canada, to really unconditionally distribute this distributed capability to the Canadian public, it was 1991. (The National Capital Free-Net and the Victoria Free-Net were not actually unleashed until late 1992, but the idea was developing in the autumn of 1991.)[8]

The full stories of how the first Canadian community networks

managed to uncage the Internet should probably be told some day. These stories need to be told to fill in the historical record, and to preempt any misconceptions that the development was simply blind luck or simply technology running its inevitable course. For now, it is enough to say that the Free-Net initiative in Canada was understood and intended from the very beginning as political action. At least, it was in the instance of the National Capital FreeNet, the community network where I live and, about which I am best able to speak.

It was understood from the first, for instance, that the relatively narrow and concrete act of having electronic mail and Usenet newsgroups available, and at their real cost to the community, would ensure widespread acceptance, and that the acceptance rate would be stunning. It was also understood that once these were made freely available, it would be difficult to take global electronic mail away, or to introduce it at the leisurely rate and higher tariffs that are customary with market driven services.

More importantly, it was understood that the inclusionary ideals and vocabulary of the FreeNet would both protect and sustain the initiative after the private sector realized that a public market for networked services was being created for them.

The National Capital FreeNet was an imagined public space, a dumb platform where all individuals, groups and organizations could represent themselves, where conflict and controversy could occur as the manifestation of conflict and controversy already occurring within the community. As a public space, no one, and certainly no group or institution, would be held responsible for another's ideology, moral standards, expectations or motivations. On the other hand, each person or organization would be accountable for themselves. Such a space could be constructed only by the community acting as a community, and not by any public or private organization acting on behalf of the community. At least that was the idea in 1991.

Just three years later, the Net situation has changed dramatically. Although still unreasonably expensive, commercial Internet access is fairly readily available, and very shortly community networks like the National Capital FreeNet will not be needed, or even wanted, as Internet access points. FreeNets will have to become the vital, local public spaces

they originally promised to be.

Just calling the facility a community network does not make it one. The label does not ensure an unconditional public terrain where the whole community can celebrate its commonalities and diversities, and work through its differences. In 1991, there was not much urgency to focus on these ideals. Access to the existing and emerging Internet services, and at no involuntary cost, was enough to ensure a community network's success. It was not then understood by the community networks that this powerful Internet access lever would slip away so quickly.

Community networks must now understand that they must be community networks. This means that they cannot be financed or run for the community by one or another institution. Although networks run by such organizations as universities, hospitals, telephone companies, or governments, often do not charge a fee, and always provide an array of valuable services, these are not the criteria by which community network can be usefully defined.

Community networks run by other organizations are always conditionally invested with the values, missions, mandates, policies and procedures and other constraints necessarily imposed by the host institutions and, therefore, cannot ever provide a public terrain. No institution has a primary mandate to provide a public space where public opinion can be under construction. When freedom of expression is a secondary add-on, it is just that, and will be encouraged only so long as it is not in conflict with what the institution is primarily about.

Today's youthful community networks, are better than they have any right to be this soon and are still our best hope, maybe our only hope, for a more participative, more self-representative democracy. It is too bad that they will have to mature so quickly if they are to reach adulthood. While they are still critical Internet access points, still the bridge between the vast diversity of the Internet and the more homogeneous organic community, they must take that opportunity to learn how to celebrate the vast diversity that is also the local community. The local community is where people live their social and political lives and that is where differences must be publicly worked through. This is most important where the differences are the most acute and where the

latitudes of tolerance are the narrowest. Community networks must be up to letting everyone speak, as painful as this will be for some, some of the time.

Children, and others unequipped to make safe judgments when encountering the most extreme clashes of values, opinions and advocacy, must be protected from these conflicts, but the community network cannot be their guardian. The family, the school, the place of worship and other societal structures are their guardians.

Finally, and most importantly, the part-time, short-term stewards of the community networks, usually called the 'board,' must understand that the public terrain is not their institution, and not their moral preserve. The construction of Public Sphere, Inc. is a betrayal of the promise community networks have for becoming a public terrain. As community networks develop and mature, they are becoming more exclusionary, more restrictive, more like any other organization. They begin to see themselves as providing something for the community, rather than as caretakers of a space created by the community. This needs to be reversed. A commitment to defending and expanding this public ground will determine whether community networks will survive more than a few more years and, what is more, whether their survival will be a matter of importance.

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Endnotes

1. Popper made the statement at a public lecture at Michigan State University in the mid-sixties. Ironically, he was arguing that the then popular social science translations of the electrical engineering 'information theory' model were misguided attempts to understand social communication by what he termed 'bucket theories,' where the transactions are comprehended only as buckets of content, devoid of any human consideration.

2. Written testimony to United States House of Representatives, Committee on Science, Space and Technology, March 23, 1993. When asked what he thought about the reliability of Cerf's estimate of 100 million Internet users by 1998, Gerry Miller, Chairman of CA*net, the non-profit company that manages and operates the Canadian Internet backbone network, responded wryly "Try 100 million hosts." While Miller might not have meant that literally, it was clear that he felt Cerf's earlier estimate to

now be a significant underestimate of expected Internet growth. Private conversation, Ottawa, November, 1994.

3. *PC Magazine*, "Bill Gates Ponders the Internet" by Michael Miller, October 11, Volume 13, Number 17, 1994 p 79.

4. An explication of framing human communication as the inevitable interplay of content and relational components of symbolic transaction was provided by Paul Watzlawick, Janet Beavin and Don Jackson in *Pragmatics Of Human Communication*. This 1967 monograph has attracted little attention from media scholars and other social theorists, probably because the unidirectional producer/consumer relationship between the mass media and their audiences is fixed, thereby eliminating or greatly inhibiting the meta-communication interplay.

5. Bruce Sterling, "Afterwards: The Hacker Crackdown Three Years Later", January 1, 1994. Found on the WELLgopher URL:
gopher://gopher.well.sf.ca.us:70/11/Publications/authors/ Sterling

6. For example, undergraduate students in most programs at most Canadian universities could not get computer accounts in 1991. Also, many of the first cohort of National Capital Free-Net subscribers were federal civil servants from departments and ministries where Internet access was available, but only to a selected few.

7. CANARIE Associates, "CANARIE Business Plan" and "CANARIE Marketing Plan", July 15, 1992.

8. The National Capital Freenet was inspired by the Cleveland Freenet, founded in 1986 by Tom Grundner at Case Western Reserve University. "Freenet" is a registered servicemark of the National Public Telecomputing Network.

Forming the Usenet Online Community

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[Editor's Note: The following article is based on a talk presented at the Mid-Manhattan Branch of the New York Public Library, December 11, 1995.]

In order to figure out how and why to form community networks which will make Usenet discussion groups and e-mail available to all in a community or city, it is helpful to be familiar with the experiences and principles that gave birth to the early online Usenet community. Many people online have found Usenet to be an important new communications medium which is helping people to change their lives in surprising and important ways. As a result, many of those online feel it worthwhile to contribute to the development of Usenet so that it will grow and flourish. They identify as Net citizens, or Netizens in a way similar to how people in the past have identified as citizens of a particular nation.

Today, however, there are still many people who do not know what this valuable online experience is, either because they don't have computers or modems or because they can't afford the hourly or monthly charges of commercial service providers and they aren't connected at a university, community, or work site. Also there are many online who know very little about the early days of the Net and how the principles then established have helped set a firm foundation for Usenet and the Internet to develop.

Writing in 1990, Lauren Weinstein, one of the pioneers of the Usenet online community, observed: "Without a historical perspective, it's quite easy to get the wrong impression of how all this came to pass. It is the result of the work of a large number of individuals, some of whom have been at it for the past 20 years."

Lauren is describing the hard work and daily efforts made by large numbers of online pioneers who have given the world the ever growing set of online discussion newsgroups which make up Usenet.

Usenet was born in 1979. It has grown from a design conceived of by two graduate students, Tom Truscott and James Ellis, into a network that today links millions of people and computers to over 14,000 different newsgroups and millions of bytes of articles available at any given time at an ever growing number of sites around the world.

In reading through posts from the early days of Usenet, one sees that one of the defining characteristics of Usenet is that the early online pioneers were willing and eager to discuss a broad ranging set of topics. In one of the posts appearing on Usenet during this early period, the writer explained: "The net represents a wide spectrum of interest (everything from the latest kill-the-millions-hardware to the latest Sci-Fi movies). All these people seem to have one thing in common," he continued, "— the willingness to discuss any idea, whether it is related to war, peace, politics, science, technology, philosophy (ethics!), science fiction, literature, etc. While there is a lot of flame [which then meant impassioned disagreements –ed] the discussion usually consists of well thought out replies to meaningful questions." And he gave examples such as "Should the Postal Service be allowed to control electronic mail?...."

But he added, "I am told that a lot of traffic on the net is not discussion, but real honest-to-goodness work ([writing computer] code, applications, ideas, and such.)"

He also noted the broad range of sites on Usenet, "The participants of the net," he wrote, "include major (and not so major) universities, corporations, think tanks, research centers, and the like."[1]

By 1982, those on Usenet were mainly at sites using the Unix operating system. However, there were also connections to sites that were on the ARPAnet, which was the research network for those with U.S. Department of Defense contracts. A March 1982 Usenet post explains: "Usenet is an international network of Unix sites with hookups into the ARPA network, too. It is basically a fancy electronic Bulletin Board System. Numerous BTL [Bell Telephone Labs] machines are connected.... In addition, there are major sites at universities: University of California at Berkeley, Duke, U Waterloo, and so on (...). And at industry nationwide: DEC, Tektronics, Microsoft, Intel, etc. There are numerous bulletin board categories, set up in a hierarchy."

The article describes how the newsgroups on Usenet "can reach a very large user community...."[2]

For example, there was discussion on early Usenet about the implications of world-wide ubiquitous networking. This network of the future was referred to as World-Net. The discussion was on the Usenet newsgroup known as Human-Nets. One of the pioneers of Usenet, Tom Truscott, writes that the discussion on Human-Nets "was...very interesting... and possible only due to the ability of the network itself to permit those interested in this obscure topic to communicate."

A description of Human-Nets, during this period, notes that it "has discussed many topics, all of them related in some way to the theme of a world-wide computer and communications network usually called World-Net. The topics have ranged very widely from something like tutorials, to state of the art discussions, to rampant speculations about technology and its impact."

Mark Horton, a Usenet pioneer from the University of California at Berkeley and later Bell Labs, who played an important role in the development of Usenet, explained in a 1981 post that Usenet was a network of sites running the Usenet software known as Netnews: "For those of you who don't know, Usenet is a logical network of sites running Netnews. Netnews is a network oriented bulletin board, making it very easy to broadcast a query to a large base of people. Usenet currently has about 50 sites and is growing rapidly."[3]

Horton emphasized that Usenet is a users' network. He explained: "Usenet, exists for and by the users, and should respond to the needs of those users."

He also noted that in these early days "Usenet is a cashless network." This meant that "No person or organization may charge another organization for news, except that by prearrangement." He explained that a site could charge only for the extra expenses incurred in sending Usenet to another site. And almost every site that received news had to be willing to forward it to at least two additional sites.

Horton's description included the mechanism for maintaining a set of standards for Usenet and for dealing with those who violated these standards. Horton wrote that articles should be of high quality, signed, and that offensive articles shouldn't be posted. "Peer pressure," he

proposed, "via direct electronic mail will, hopefully, prevent any further distasteful or offensive articles. Repeated violations," he noted, "can be grounds for removing a user or site from the network."[4]

Common to many of the posts in these early years, is the encouragement that users participate and voice their concerns and opinions, both in the ongoing discussion in various newsgroups, as well as in determining the practices and policies guiding how Usenet functions. For example, Adam Buchsbaum, a high school student who played an important role in early Usenet, started the NET.columbia newsgroup, a newsgroup about space issues. He posted the following opening message inviting participation: "Greetings fellow space enthusiasts! This newsgroup was designed to inform people on developments in our space program. Although named 'columbia,' it will contain articles about the entire space program, including the shuttle for which it is named. Please feel free to reply, comment, criticize, and submit your articles. Also, I hope this will serve as an open ground for discussion about events in the space program. Comments, etc. can be mailed to myself (...) or submitted directly into the newsgroup. In all, I hope that this will provide an atmosphere for people who are interested in the space program to discuss it and be informed of new events."[5]

Such articles on Usenet, welcoming contributions from all participants, helped to set a firm foundation for interesting and lively discussion.

Usenet pioneers describe how even though Usenet was a good place for a user who wanted to sell a used car, commercial advertising was greatly frowned upon. The story is told about how a certain AT&T site played a large role in helping to transport Usenet and e-mail, but after a supervisor at AT&T discovered that a commercial vendor was using the AT&T site to help him get e-mail to support his commercial product, the AT&T site was no longer allowed to play the same role. Since the contributions to Usenet were voluntary, and often contributed by the users, commercial use of Usenet was strictly limited. Also, during a more recent period much of Usenet was transported over the National Science Foundation (NSF) backbone of the Internet. The U.S. government had an Acceptable Use Policy which forbid for profit activity for projects funded by or making use of NSF funding. This helped to limit

commercial abuse on Usenet until the NSF recently turned the NSF backbone of the Internet over to private entities.

From the time I got access to Usenet in January 1992 via the Cleveland Freenet, I have found that there continue to be serious discussions on Usenet though they are less concentrated today than in the early years of Usenet. Also, I found that it was possible to get help with real problems like medical problems as at the St. Silicon Sports Medicine Clinic on Cleveland Freenet, or with problems dealing with workman's compensation or tenant rights or consumer problems and similar issues via the discussions that occur in relevant newsgroups on Usenet. Helpful comments and perspective have been provided locally from users in response to posts on local newsgroups like **nyc.general,** or from users around the U.S., as in responses to posts on **soc.culture.usa,** or from users on other continents like Australia or Asia as in posts on **sci.econ, alt.amateur-comp, soc.culture.japan, soc.culture.german**, etc.

Also, posts on Usenet asking for help with computer problems to newsgroups like **comp.misc** or **comp.os.linux.hardware** or for advice about what computers people found reliable when planning on getting a new laptop as on **comp.laptops** have gotten helpful responses that it would be difficult to get elsewhere.

But just as in the early days of Usenet, today there are serious problems being discussed online. The U.S. government has promoted commercial use of the Internet and Usenet rather than supporting a system of Freenets or community networks with acceptable use polices around the U.S. The result is that there are ads and other junk posts flowing across Usenet, and users are too often getting junk mail from vendors, instead of helpful comments from other users. But the principles that were established while Usenet was first developed are proving helpful again today. People online have been discussing their different views of the causes of the problems and in the process working together to find ways to tackle these problems. There is a common desire among many that Usenet continue to be a valuable communications medium for an ever growing number of people. Since Usenet was created as a user's network for discussion and communication, many people participate because they like to discuss issues and to read what

others contribute. But even more importantly, many users have found that when they have a problem, they can post it and get help from others. In return they provide help whenever they can. In the process, all benefit from the cooperative online community that Usenet has made possible.

This kind of discussion and cooperative effort is needed today by people who are not yet online as well as those who are online to deal with the hard problems of our times. That is why it is important that all have access to the global computer network that the pioneers of Usenet created which makes it possible to communicate with people around the world and so get a refreshing and helpful perspective from others.

Community networks which make free access to Usenet and e-mail available to the folks of a community, town or city, are needed today more than ever. And the lessons and principles of the pioneers of Usenet and of the Netizens from around the world who have found that the communication that Usenet makes possible is crucial to their lives will hopefully provide the needed foundation to solve the problems to create free community networks in those areas that don't yet have them in the near future.

Notes:

1. NET.news, wolfvax.53, net.news, wolfvax!jcz, Mon Nov 2 21:47:32 1981, Net Names, In Real Life: Carl Zeigler, Location NCSU, Raleigh.

2. ucbarpa.1182, net.sources, Subject: ARPAVAX: Usenet, Tue, Apr 20, 19:50:48 1982, misc/newsinfo, from eiss!ladm, Fri Mar 19 16:20:27.

3. Mark Horton, fa.unix-wizards, ucbvax.4080, Sun Sep 27 22:04:41 1981, Usenet membership.

4. NET.news, cbosgd.794, Wed Dec 23 21:28:32 1981, Subject: Proposed Usenet policies.

5. net.columbia, research!sjb, Thu Sep 17 07:28:50 1981. Adam Buchsbaum also kept the official list of newsgroups and published it regularly to the Net for several years in the mid 1980s.

A Brief History of Cleveland Freenet

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[Editor's Note: The following article is taken from a talk presented at the Mid-Manhattan Branch of the New York Public Library, July 10, 1995.]

The Cleveland Freenet computer networking system is often cited as the grandfather of the worldwide community computer networking movement. This movement takes as its goal the provision by community networks of free or at-cost dial-up and public terminal access to community and world wide communication. Cleveland Freenet and other community networks are made possible by volunteers from all sectors of the community. In 1992, Cleveland FreeNet had well over 40,000 registered users making more than 10,000 accesses per day. Over 250 volunteer system operators maintained and upgraded the system and kept the information fresh or got answers to questions posted by users. This model is proving attractive to citizens around the world. It is worth looking at how the first Freenet got started in Cleveland.

Cleveland Freenet traces its origin to 1984 when an education professor, Tom Grundner, was involved in monitoring the quality of education offered to medical students and interns who were spread over five Cleveland hospitals and clinics. He devised a system that used an Apple II+ computer and a 300 baud modem to receive questions over phone lines from the medical students and interns who had access to a microcomputer or a computer terminal with a modem. The questioners were provided within a reasonable time, with answers from relevant doctors. The system was eventually called Doc-in-the-Box. Within a week of starting up the system, the telephone number to reach the central Apple II+ computer had gotten out and lay people started to leave medical questions with the hope the doctors would answer them also. The doctors answered all questions. What was in many cases quality medical advice was available to some who ordinarily might not have been able to afford the usual fee or find a doctor for such advice. It

dawned on those involved that a new medium for dispensing medical information was opening up.

In 1985 Grundner expanded this system which was intended especially for medical students and interns to a new system open to all who had a medical question and a computer and modem. He called the new system Saint Silicon's Hospital and Information Dispensary. Saint Silicon operated in some ways like a real hospital. When you used your modem to dial up, the first question on the screen was, "Have you been a patient here before?" If you answered No, the next screen had the title, "Admitting Desk" and required you to provide some information about yourself. Then you could post medically related questions in the message area of the system called the Clinic to be answered by a doctor within 24 hours. A doctor would read the question and post the question and his answer on the system so all who dialed in to Saint Silicon could read them. Within a few weeks of the launch of Saint Silicon, a steady average of more than 300 calls were being received per week, saturating the one line system.

Grundner wrote up the Saint Silicon experience in an article for the *New England Journal of Medicine* (NEJM).* At about the same time, representatives of American Telephone and Telegraph (AT&T) offered to donate an AT&T 3B2-400 Unix based minicomputer to support the operation and expansion of Grundner's experimental system. Unix is a multitasking, time-sharing computer operating system and the AT&T 3B2-400 was a much more powerful computer then the Apple II+. With the better equipment, Grundner designed a system based on the networking software used to make the newsgroup system know as Usenet possible. The new system was intended for the posting of questions and answers across the whole spectrum of areas that make up a community. Grundner envisioned an electronic city with a post office, government house, library, court house for legal questions, etc., in addition to a hospital. Eventually the system would also have hobbyist areas, special interest areas, and kiosks and coffee shops for people to meet at and have discussions. This was Freenet 1, the first version of Cleveland Freenet (1985-1989). The sections of Freenet were staffed by doctors, lawyers, hobbyists, etc., each contributing as part of his or her job or voluntarily. People who dialed into Cleveland FreeNet were never

charged to use the system nor did those who provided information or their expertise get paid by the Freenet.

The museums and parks and theaters and clubs of Cleveland voluntarily provided the information about themselves and some staff time and in exchange that information was readily accessible by the users of the Freenet. Doctors, lawyers, car mechanics, etc. volunteered in large numbers. One incentive being that Freenet users satisfied with the online answers to relevant questions often became paying clients and customers. Someone I know is no longer on crutches because a doctor who showed a genuine understanding of her condition by his response to her post on Cleveland Freenet was chosen by her to do an operation. The success of that operation solved a condition doctors in her own state said was permanent.

In 1989, Case Western Reserve University became the dominant sponsor of Cleveland Freenet. It supported development of the software and eventually took over the system, now Freenet 2, the Cleveland Freenet that exists today. This Freenet includes many areas of active discussion, some for senior citizens, some for teenagers, some for any group with a common interest. Also, by giving its users access to Usenet newsgroups, Freenet makes it possible for people in Cleveland to be communicating and interacting with Usenet users all over the world. Cleveland Freenet serves as a means of limited free Internet access for its users who each get a sizable electronic mail storage area, limited file handling and transfer capability, and connectivity to other Freenets in the U. S. and around the world. For many people, Cleveland Freenet has served as the starting point for their online activities. And as an example Cleveland Freenet has given impetus to a global community computer networking movement. By 1995 there were at least 150 similar community networking systems up or soon to be up around the world and many more in some stage of planning. There are organizing committees in at least 40 U.S. States, all across Canada and in 10 or more other countries.

Some of the guiding vision behind the community networking movement is that every community will benefit if all the citizens of that community have free access to global communication technology and to information about community resources. If access has to be paid for

by the users, some segment of the community will be left out both from use of the resources but also as a resource. For many community networks the name Freenet conveys their principle that access has to be free of cost to the user. Some communities like Seattle, Washington provide terminals or computers in public libraries to fulfill this requirement. In most communities where community networks are being organized there is however opposition from some who want to charge for access. Also, there are expenses involved for the equipment and especially for leasing phone lines even if all the staffing and administration is done by volunteers. A widely verified assessment is that in North America the line leasing expense amounts to about $8 to $12 per user per year (roughly $1.00 per user per month). The challenge to each organizing or operating committee is to solve these and similar problems. Even Cleveland Freenet is currently facing the problem that Case Western Reserve University may withdraw some of the $50,000 annual budget that has been its sponsorship contribution in the last few years.

There are many active community oriented people and some government bodies throughout the world who see some level of community provided access to community based computer network information and communication as crucial to modern life. There are people in many cities and rural areas who are looking to a community network or Freenet as a first step into the telecommunications revolution. Cleveland Freenet has been an inspiration to many such people.

*"Interactive Medical Telecomputing: An Alternative Approach to Community Health Education," NEJM, Vol 314 no 15, April 10, 1986, pp. 982-985.

Note: The sources of information for this article were help from some people on Cleveland Freenet (telnet free-net-in-a.cwru.edu), an e-mail correspondence from Tom Grundner, the NEJM article, and a chapter in *The On-Line User's Encyclopedia: Bulletin Boards and Beyond*, by Bernard Adoba, Addison-Wesley, Reading, MA., 1993.

[Author's Note: In late 1995 it was reported that Tom Grundner resigned as Director of the National Public Telecommunications Network. Subsequently, it was reported that the Deputy Director also

resigned. The NPTN had been formed by Grundner in September 1989 to coordinate the activities of the Freenets that formed on the model of Cleveland Freenet.

On the mailing list serving members of the NPTN affiliated Freenets, questions were raised as to what was happening. The new leadership responded that it will take a little while to put the finances back in order and would not answer the questions until then. Many subscribers to the list were not satisfied and requested a national meeting to discuss the crisis, assess the situation and propose ways forward. When the new leadership turned down that proposal, there were submissions to the list documenting a long history of top down unhelpful NPTN practices and the lack of democratic forms within NPTN to deal with the crisis. In a similar way, the recently formed NPTN affiliated New York City Freenet Organizing Committee has held no public meetings nor shared with those interested any of its inner workings or documents.]

Universal Access to E-Mail

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[Editor's Note: We are reprinting the following announcement from an e-mail message on an Internet mailing list]

On November 21, 1995, RAND, a nonprofit policy research and analysis organization, released a report called Universal Access to E-Mail: Feasibility and Societal Implications. The report includes the following policy recommendations:

* that the United States address the ever-widening gaps in access to e-mail.

* that we develop simple means to provide e-mail to every citizen.

* that we create incentives to develop multiple access points (home, work, schools, kiosks) to e-mail.

* that we support development of noncommercial activities via e-mail and the Internet (i.e. civic participation).

* that we emphasize two-way communication on the National Information Infrastructure as a hook for increasing democratic participation and increased use of all Internet services.

The report concludes that this goal is both reachable and vital for increased democratic participation and economic development. The report is available from the National Book Network (800.462.6420) — use reference number MR-650-MF.

The book is also available from:

> RAND Distribution Services
> PO Box 2138
> Santa Monica, CA 90407-2138
> (310)451-7002, (fax (310)451-6915)
> E-mail: **order@rand.org**
> World Wide Web**: http://www.rand.org**

[Editor's Comment: The RAND Report, funded by a grant from the Markle Foundation, described many of the benefits that would result from all in the U.S. having access to e-mail. It recognizes that "market" forces in the U.S. are not able to provide for ubiquitous e-mail. It concludes that there needs to be government intervention for ubiquitous e-mail to become reality soon.

The RAND Report on the need for universal access to e-mail is one of the first signs in U.S. policy circles that there is a need for public policy provisions to provide for universal access to the Internet. However, the RAND Report fails to acknowledge the importance of Usenet newsgroups or the potential they hold for making more democratic participation in civic life possible for those who gain access to the Internet and Usenet. Also, the Report is practically silent on the development of the Freenet movement in North America and around the world. It chooses instead to look at several particular examples of networks that charge for access, like the Blacksburg Electronic Village, in Virginia, Playing to Win in New York City, and LatinoNet. The relatively recently created Seattle Community Net based its development on the Free-Net model but the RAND Report ignores the longer standing

and important Freenets such as the Cleveland Freenet. Also, some of the examples mentioned in the Report like the Public Electronic Network (PEN), in Santa Monica, CA, do not offer access to the Internet, but only to local public discussions about local issues.

The recommendations provided by the RAND Report to implement its policy proposals are disappointing. Instead of supporting the volunteer organizations which have worked so hard to create the Free-Nets across the U.S., or the academic institutions like Case Western University in Cleveland, which have reached out to the surrounding community and supported Freenets like the Cleveland Freenet, the RAND Report recommends subsidizing for-profit service providers to provide accounts for those who can't afford Internet Access. It projects paying a public subsidy to these service providers of one billion dollars a year to make such access possible.

The Report appeared one year after the NTIA online meeting [See next article –ed] where people around the U.S. and abroad discussed and supported the need for online access to Usenet and e-mail for all. Many participants in this online meeting urged government action to make online access possible. Surprisingly, the RAND researchers do not make any references to this online public policy meeting. It is hard to understand how these researchers cannot be aware of this important prototype online hearing and of the sentiments that were expressed there on the future of the Net.

Despite such weaknesses in the RAND Report, it is good that there is some effort toward examining why and how to make online access available to all in the U.S. However, it is also necessary that such policy discussion include an examination of how the Internet and Usenet were developed and encouraged, and how the Freenet movement built on these origins. It would be good to see further studies and public discussion of this important issue.]

An Online Prototype for Policy Decisions

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[Editor's Note: The following article, with small changes, was delivered as a talk at the Telecommunities '95 Conference, Victoria, BC, August, 1995.]

PART I

In spring, 1995, a special issue of *Scientific American* appeared, exploring the advance that the computer and communications revolution is having for our times.[1] In the introduction to the issue was a cartoon. The cartoon shows several paleontologists on the trail of a major new discovery. The caption reads: "Well, I don't see any point in looking any further. It was probably just one of those wild rumors." They are about to turn back as they feel they aren't finding what they are looking for. The cartoon shows they are standing in the midst of a huge footprint. However, because it is so large, they don't see it.

This cartoon is a helpful analogy to our situation today. There have been very significant computer networking developments in the past 30 years, but these advances are so grand that it is easy to miss them, and to begin to turn back, just like the paleontologists. It is important to understand what these advances are, so we can recognize them, and learn in what direction the footprints point, rather than turning back.

Today we are at a turning point in terms of what the future direction of the Global Computer Network will be. Changes are being made in U.S. policy and in the policy of countries around the world regarding the Net and Net access and thus there are important issues being raised about what the new policy will and should be.

In response to criticisms in the U.S. that the online community was not being involved enough in the setting of the new policy, an online conference was held November 14-23, 1994, by the U.S. National Telecommunications Information Administration — the NTIA. The NTIA virtual conference was co-sponsored by the National Telecommu-

nications Information Administration and the Information Infrastructure Task Force (IITF), as part of the U. S. government's National Information Infrastructure Initiative. The conference gave people both in the U.S. and around the world a chance to discuss their concerns about government policy on expanding access to the Net.

People needed a computer to take part or could participate at a limited number of public access sites that were set up around the U.S. in public libraries and other public places. The online conference was available via a mailing list, where all the posts were sent to the subscriber's e-mail mailbox, or as a Usenet newsgroup on a limited number of sites. Also a World Wide Web site was set up so one could read the posts, without being able to participate. There were several conferences on different topics, two of which discussed increasing access to the Net to a broader sector of the U.S. population.*

One paper posted to the online conferences described the social and technical advance that the Global Computer Communications Network makes possible. The author of the paper wrote: "Welcome to the 21st century. You are a Netizen, or a Net Citizen, and you exist as a citizen of the world thanks to the global connectivity that the Net makes possible. You consider everyone as your compatriot. You physically live in one country but you are in contact with much of the world via the global computer network."

"The situation I describe is only a prediction of the future, but a large part of the necessary infrastructure currently exists.... Every day more computers attach to the existing network and every new computer adds to the user base — at least twenty five million people are interconnected today...."

"We are seeing a revitalization of society. The frameworks are being redesigned from the bottom up. A new more democratic world is becoming possible."[2]

This paper was one of the many contributions in response to the NTIA statement welcoming participants to the online conference. The NTIA listed several purposes for the conference. Among those purposes were:

"1) Garner opinions and views on universal telecommunications service that may shape the legislative and regulatory debate.

2) Demonstrate how networking technology can broaden participation in the development of government policies, specifically, universal service telecommunications policy.

3) Illustrate the potential for using the NII to create an electronic commons.

4) Create a network of individuals and institutions that will continue the dialog started by the conference, once the formal sponsorship is over."

"This conference," the NTIA explained, "is an experiment in a new form of dialog among citizens and with their government. The conference is not a one-way, top down approach, it is a conversation. It holds the promise of reworking the compact between citizens and their government."[3]

What was the response to the call? In the process of the week long discussions a number of voices complained about the commercial entities that were slated to take over the U.S. portion of the backbone of the Internet. Many expressed concern that government intervention was needed to make access to the Net broadly available in the U.S. They gave experiences and examples to demonstrate that leaving the problem of expanded access to commercial entities would not solve the problems that expanded access required be solved.

For example, one participant wrote: "I want to add my voice to those favoring greater, not less, government intervention... to protect the interest of the people against the narrow sectarian interests of large telecommunications industries. Why the federal government gave up its part ownership in the Internet backbone is a mystery to me. An active interventionist government is essential to assure universal access at affordable prices (for)... people living in (the) heart of cities or in the Upper Peninsula of Michigan."[4]

A number of people from rural and remote areas participated and explained their concern that they not be left out of the online future because connecting them to the Net would not be profitable.

In response to a post from someone in Oregon, a librarian from a remote area of Michigan wrote: "I'd like to hear more from the Oregon edge of the world. Being from a small, rural library in the Upper Peninsula of Michigan, with a very small tax base...faced with geographical

isolation and no clout...how do we get our voices heard and assure our patrons equal and universal access to these new and wonderful services... we have no local nodes... every hook up is a long distance call. What are you doing over there?"[5]

A participant working with a scientific foundation echoed this concern. He wrote: "When faced with the resources and persuasive power (legal and otherwise) of enormous multinational corporations with annual incomes that are orders of magnitude greater than some of the territories they serve, only a capable and committed national guarantee of access, and a national cost pool can provide access to these new technology resources."

"And THE INTERNET IS SPECIALLY IMPORTANT to areas with limited access to technical and scientific resources. As one of the leading non-profit educational foundations devoted to the environmental problems of small tropical islands, we (Islands Resources Foundation) are amazed at the richness of the Internet resource, and terribly concerned that our constituents throughout all of the world's oceans are going to (be) closed off from access to this resource because of monopoly pricing policies." (To the NTIA, he urged, "we ask careful attention to the equity issues of access, and a federal guarantee of access and availability.")[6]

Recognizing that people without computers or net access wouldn't be able to participate in this conference because they didn't have computers and modems already available, a limited number of public access sites had been set up. One poster from San Francisco explained how this made it possible to participate. The person wrote: "I am sitting in the corner of the card catalogue room at the San Francisco main library,(...) doing what I hope I will be able to do for the rest of my years: use computers freely. Internet, online discourse, rather is invaluable; the role of the computer-friendly mind is becoming ever greater and the need to communicate within this medium needs to remain open to all. If not, we will fall into the abyss of the isolated world.... We could become isolated in a cubicle existing only through our computer.... I would choose otherwise. Keep computers part of the schools and libraries, and definitely make (the) Internet free to any who wish to use it. Otherwise we are doomed."[7]

Another poster expressed support for library access and participation. He cautioned: "If things go as it looks they are going now, libraries will lose out to business in the war for the net. Yes, this means that we will be drowning in a deluge of what big business tells us we want to hear and the magic of the net will vanish in a poof of monied interests. Some estimates that I have read say that it should cost no more than $10 a year per user for universal access to the national network, including library sites so that those without phones or home computers have access. The NSF has decided against funding the Internet anymore and all the talk of (...)(late) is about the privatizing of the net. No one seems to get the point involved (or, worse: They *do* get the point.). The backbone of the net should be retained by the government. The cost is relatively inexpensive and the benefits are grand. Paying large fees (some plans call for charges based on the amount of data consumed and others by time spent net-surfing) defeats the nature of the net. We have possibilities for direct democracy. At the very least, for representation of mentally distinct groups as opposed to physical. That is, now we are represented in Congress by geographical area, not what our opinions support...."[8]

Several people complained how Net access was not only difficult because of the cost of modem connections, but that for many people it was a financial hardship to even own a computer. As one poster from Virginia explained: "As a newcomer to the net, I don't feel I have much relevant to say. All this chatter about Info Superhighways strikes me as so much political double talk. The highway exists. But to drive on the damn thing you need a car. Computers (Macs or PCs, etc.) are not items that someone making 6 or 7 dollars an hour can easily obtain."[9]

Other posters described the efforts in their areas to provide public access to the Net. In Seattle, we learned that the Seattle Public Library and the Seattle branch of Computer Professions for Social Responsibility had set up a system that made e-mail access and an e-mail mailbox available to anyone in Seattle who wanted it.

We learned that in Blacksburg, Virginia, federal funds had helped to set up the Blacksburg Electronic Village by installing fiber optic cable to all new apartments being built so the people would have direct access to the Internet.[10]

Canadian posters described how the Blue Sky Free-Net in Manitoba Canada was providing access to all of Manitoba with no extra long distance phone charges to small rural areas. We were told that in Manitoba, "They have basically a hub in each of the different calling areas...some places will be piggy-backing on CBC radio waves, others on satellite connections."[11]

Also proposals were made to provide access to other forgotten segments of the society like the homeless. A poster from San Francisco proposed that terminals with network access be installed in homeless shelters. The person explained: "Provide homeless shelters with online systems frozen into Netnews and e-mail, or e-mail and gopher. A 386 terminal running Linux, Xwindows and Netscape, and linked into a user group such as e-mail and gopher, etc., would permit defining the lowest level of involvement. People need communication to represent themselves, and e-mail for that reason, as well as Netnews."[12] People from other countries also contributed to the discussion providing a broader perspective than might normally be available in a national policy discussion.

From the Netherlands came the following observation: "After attending the Virtual Conference for two days now, I would like to give my first (contribution) to the discussion. Since I work for the government of the Netherlands, at the Central Bureau of Statistics, which is part of the Department of Economic Affairs, the question of availability of statistical figures intrigues me. As a result of safety-precautions there is no online connection possible with our network. There should, however, be a source for the public to get our data from, we get paid by community-money so the community should benefit (from) the results of our efforts. I am wondering how these matters are regulated in the other countries who participate in the Virtual Conference." "With kind greetings," he ended.[13]

And a Psychology Professor from Moscow State University in Russia wrote: "Hi, netters: (He explained how he had subscribed to the two mailing lists dealing with network access, since he didn't think there would be many messages so it wouldn't require much time.) "I'm glad I'm wrong," he admitted. "I can't follow the massive traffic of discussions. Sometimes my English is too poor to grasp the essence, some-

times I don't know the realities, legislation etc. Some themes I'm greatly pleased with.... I agree gladly with Larry Irving — (of the NTIA who had said he was-ed) thrilled with the volume of traffic & quality of discussion. I am, too. Perhaps I'll find more time later to read the messages more attentively. I shall not un-subscribe, though." "The people in the 2nd & 3rd worlds," he continued, "are just now trying to find our own ways to use the Internet facilities & pleasures. I am interested in (the -ed) investigation of these ways, in teaching and helping them in this kind of activity. Besides, my group is working on bibliographic database construction and letting...remote access to it. For several days only we got an IP access to the WWW, we are not experienced yet to access. So I use ordinary e-mail. Good luck to all subscribers," he ended. "I wish you success."[14]

As part of the discussion several participants discussed how they felt the ability to communicate was the real advance represented by the Global Computer Network, rather than the means of providing information as others have maintained.

Titling her message, "Not just information — Communication," a participant from Palo Alto, California wrote, "...the NTIA is building a one-way highway to a dead end when they take the word Telecommunications out of their rhetoric." She listed several points for people to consider, among which were:

 "1. Information is always old already.

  2. Tele-communications, properly algorithmed, provides dynamic information about who we are as the human race....

 3. Telecommunications is the road to direct democracy and a future for this planet.

  4. Down-stream bandwidth is just another broadcast medium. Upstream bandwidth is power for the people."[15]

In a similar vein, another participant who was a college student wrote: "To start off, I take issue with the term "service." As I have stated...the terminology being used is being adopted from an out-dated model of a Top-Down communications system. The new era of interconnection and many-to-many communication afforded by Netnews and Mailing lists (...) brings to the forefront a model of bottom-up rather than top-down communication and information. It is time to re-examine

society and welcome the democratizing trends of many-to-many communication over the one-to-many models as represented by broadcast television, radio, newspapers and other media. Rather than service, I would propose that we examine what "forms of communication" should be available. So instead of talking about "Universal Service" we should consider "Universal Interconnection to forms of communication."[16]

These were just some of the many concerns raised in this week long online conference supported and sponsored by a branch of the U.S. government. The people participating raised serious questions as to whether the real issues needed to make access possible for the many rather than a multimedia plaything for the few, would be considered and examined.

Many were concerned for those who didn't now have access to the Net, either because they didn't have modems or even more fundamentally because they couldn't afford computers. Thus there was a significant sentiment that computers with network access be made available in public places where people could have access, like public libraries.

One participant noted that current policy was favoring a few people having video connections rather than the many having e-mail capability. He requested that we: "Redirect some of the funding for high end technology into getting the mainstream public onto the net. Instead of funding an hour of video between two users, we should use the money to let 100,000 users send an e-mail message."[17]

Summing up the sentiment expressed during the conference, a participant wrote: "I find it hard to believe a state can function in the 21st century without a solid information infrastructure and citizens with enough technological savvy to use it."[18]

The conference was a very significant event. From cities to rural and remote areas, people made the hard effort to express their concern and commitment to having everyone have access and to protest the U.S. government policy of giving commercial entities the Net as a policy that is in conflict with the public and social goal of universal network access for all. Despite hardships that people experienced to participate — mailboxes got clogged with the volume of e-mail that people couldn't keep up with, newsgroups appeared late on Usenet and at very few sites so it

was hard to get access to them, the lack of publicity meant that many didn't find out till the conference was almost over, etc., the people who participated did what they could to contribute to and speak up for the means for everyone to be able to be part of the net as a contributor not just as a listener. A new government form was created which is very different from what has existed thus far.

This online conference made clear that the hard problems of our time can be solved only if the most advanced technology is used to involve the largest possible number of people in the decisions that will affect their lives.

PART II

In trying to determine the significance of this conference for solving the problems of the future of the Net, it is helpful, however, to look back at how a similar problem was explored 30 years ago and see if there are lessons that can be applied to the problem of today.

In Spring of 1961 an important event occurred. MIT, a pioneering engineering institution was to celebrate its 100th birthday. A call went out, for suggestions for what would be an appropriate celebration. Martin Greenberger, then a young MIT faculty member, describes how he responded to the request and proposed a series of lectures on the Computer and the Future.

"We threw open the hatches," Greenberger remembered,"and got together the best people we could assemble — whatever their fields. We asked these thinkers to project ahead and help us to understand what was in store."[19]

One of the invited speakers was the British writer Sir Charles Percy Snow (better known as C. P. Snow). His talk on "Scientists and Decision Making" opened the conference. In 1961, working computers were only 17 years old. One of the first working computers was the ENIAC which was created in 1945. The computer pioneers and enthusiasts who gathered at the MIT conference, however, recognized the enormous impact that computers could have on society in the future, particularly on the university of the future if the computer could be made more accessible. This was a period when computers were very expensive and not very available. When one did have access to a computer, it was most

likely to something like an IBM mainframe, which was being operated in batch processor mode. This meant that one delivered one's program on a stack of punch cards to the computer center and some hours or days later, returned for a printout of the computer results.

Those at MIT and at other academic institutions recognized that there would be a great and important change in computer science, in particular, and in university education, in general, if every student could have access to a computer for at least 2 hours a day and if the computer could be used increasingly by educators and researchers.

Though these were important issues on the minds of the MIT faculty in 1961, the opening talk at the centennial conference took a different direction. C. P. Snow described the period that they were living in, saying: "We happen to be living at a time of a major scientific revolution, probably more important in its consequences than the first industrial revolution."[20]

He predicted that the significance of the changes would be something "we shall see in full force in the very near future." And he raised the question: Will the challenge represented by the emergence of the computer be treated seriously by society?

Snow explained that when important decisions were made by a society, they were more likely to be good decisions if a large number of people were involved in the decision making process. He gave examples of decisions made by the British government during and after World War II. One of the decisions was to undertake strategic bombing, that is the bombing of civilian populations, as part of the British War effort. C. P. Snow explained how he felt this decision was made by a very small number of people and that in his view, it lengthened the war and was a harmful decision to the British people. He also described the decision in Great Britain to introduce National Health Care. That decision involved the discussion of many people at many levels of British society. Such broad public discussion, he believed, managed to filter up to the government, and led to legislation that was of great benefit to British society. Snow was fearful that a small number of people would be making the needed decisions regarding the computer and he warned, "A handful of people, having no relation to the will of society, having no communication with the rest of society, will be taking decisions in secret

which are going to affect our lives in the deepest sense."[21]

He also cautioned against having government officials without the adequate scientific or technical background, making decisions that would determine the future of the computer. It was necessary, he maintained, that those who understood the depths of the arguments of the issues being dealt with, be involved with government policy concerning computers.

Others at the conference explored how the computer would impact on diverse areas of society. John Kemeny, who later became one of the creators of the BASIC programming language and the DTSS time-sharing system, explored how the computer could affect the library of the future. Alan Perlis, another speaker at the conference, explored how the computer might change the university of the future. J. C. R. Licklider, who was to become the head of the soon to be created Information Processing Techniques Office under ARPA (The Advanced Project Agency of the U.S. Department of Defense) also attended the conference. He had recently published a thought provoking article, "Man Computer Symbiosis", exploring how computers would change intellectual processes. In his contributions to the conference, J. C. R. Licklider examined the human-computer partnership and cautioned that the human must not so clutter his mind with codes and formats that he cannot think about his substantiative problem. He projected that in the future the computer would aid intellectual development, explaining, "In due course it will be part of the formulation of problems, part of real-time thinking, problem solving, doing of research, conducting of experiments, getting into the literature and finding references…. And it will mediate and facilitate communication among human beings."[22]

He proposed that the most important function of the digital computer in the university, should be as a catalysis for the development of computer science.

Other participants at the conference included Claude Shannon and Norbert Wiener. Both had been instrumental in putting the study of engineering and communication on a scientific footing. At the conference, Wiener observed that "a computing machine is a general-purpose device that can be programmed to do many specific jobs. But, if you fail to give a necessary instruction to a computer, you

cannot expect the machine itself to think of this restriction. An unsafe act, thus," Wiener warned, "may not show its danger until it is too late." Wiener cautioned that humans had to oversee the computer, that the computer required more human intellect, not less. "They involve more thought," he explained, "and not less thought. They may save certain parts of our efforts, but they do not eliminate the need for intelligence."[23]

One of the most important presentations at the conference was by the young MIT faculty member, John McCarthy. McCarthy spoke as a representative of a committee set up by the MIT administration, to make recommendations about the future computer needs of MIT. McCarthy described a new form of computing that was called time-sharing and the vision for the future that it represented. He explained how a computer time-sharing system was one that interacts with many simultaneous users through a number of remote consoles. With time-sharing, multiple users could work interactively with a computer, by taking advantage of the faster speed the computer functioned at, as opposed to humans. Several users could work at terminals sharing a computer, but they would each have the illusion that they were the sole user of the computer.

At the end of the conference, the linguist Yehuda Bar-Hillel concluded that it was hard to predict what the future of the computer would be in the long term, or even in the short term. However, he recommended that it was important to decide what type of future it would be worthwhile to encourage and to work to make that future a reality.

The conference marked an important turning point in the development of the computer. It represented in effect, the passing of the torch from those like Claude Shannon and Norbert Wiener who had developed information and communication theory and those like John Maunchly and Grace Hopper who had helped create the working computer and functioning software. They were passing the torch, so to speak, to those who would pioneer a new form of computing, that of the time-sharing of computers. The development of time-sharing would in time lead to the creation of online communities of computer users, and then to the linking of such online communities into a supercommunity of online communities, which eventually became the development of a Global

Computer Network.

The MIT faculty member who presented the talk on time-sharing at the Centennial Conference, John McCarthy, described the technical change that was on the horizon in 1961.[24] McCarthy realized that a new form of computing would become possible and that MIT could help to make the needed technological leap. This was just at the time of the change from vacuum tubes to transistorized computers.

Another participant at the MIT Conference was Robert Fano, a senior faculty member at MIT, who had contributed to the information theory developed by Wiener and Shannon. In the summer of 1961, Fano took a sabbatical to work at Lincoln Labs because he hoped to learn more about digital computers there. He felt one had to begin thinking about communication in the general purpose way that the digital computer was making possible.[25]

Also, in the summer of 1961 Fernando Corbato, then the assistant director of the MIT Computation Center, along with several other programmers from the Center, were "in the heat of trying to work out the intricacies of the software problems to create a primitive prototype for a time-sharing system" which they called the Compatible Time-Sharing System or CTSS.[26] Though they gave a demonstration of a crude prototype time-sharing system in November, 1961, they couldn't develop CTSS until the spring of 1962 when the more advanced hardware, the IBM 7090, the first transistorized computer in the IBM family, arrived.

Corbato, McCarthy, Fano and Licklider were part of a group of scientists and engineers who had become convinced that interactive computing and time-sharing had to be developed and it would need to replace the batch processing mode of computing that commercial companies like IBM projected as the future of the computer.

Licklider had gone to work at the acoustical research company Bolt Beranek and Newman, known as BBN. He had been able to try out one of the earliest time-sharing systems there. Licklider describes the sentiment of the group of researchers who were determined to make the leap to time-sharing, explaining: "Well, it turned out that these guys at MIT and BBN. We'd all gotten really excited about interactive computing and we had a kind of little religion growing here about how this

was going to be totally different from batch processing."[27]

By the Fall of 1962, Licklider had accepted a position with ARPA, to support the development of time-sharing and interactive computing. One of the first projects that Licklider funded was Project MAC, a research project at MIT, headed by Robert Fano, to achieve 3 goals:

1) time-sharing
2) a community using it
3) education which meant supporting research   projects

Out of the work done by Project MAC, a time-sharing system was developed and an online community of computer users grew up. Members of the community not only participated in the system, but also contributed the programs and data to help the system grow and regenerate.

Describing the surprise that the creation of this online community represented to the researchers who had pioneered time-sharing, Fano observed: "Friends being born out of using somebody else's program, people communicating through the system and then meeting by accident and saying 'Oh, that's you.' All sorts of things. It was a nonreproducable community phenomenon."[28]

In addition, the creation of such time-sharing systems provided the model for a more expansive online community, for the online super community that would be developed through linking together the various time-sharing communities that had developed. In 1968, Licklider and Robert Taylor described the networking model that had developed from time-sharing, the supercommunity of time-sharing communities, which provided the vision for what was to become the ARPAnet, and then the Internet, and then the Global Computer Network of our times. Describing online time-sharing communities of 1968, they observed that these communities were learning how to cooperate and mutually support each other and they were producing large and growing resources of programs, data and know-how which they felt was only the beginning of the kind of online networking supercommunity of the future.

Also, building on the work done creating the Compatible Time-Sharing System at MIT in the early 1960s, Bell Labs programmers Ken Thompson, Dennis Ritchie and others developed the Unix Time-sharing system in 1969.

Their goal, similar to that of the Project MAC pioneers, was to create a community of programmers. Reviewing the achievements of CTSS, Fano described one of the important but un-met goals. He explained, "One of our goals was to make the computer truly accessible to people wherever they were. We did not succeed. For people who lived in the community that used the system, it was fine. In any system like that, you keep learning things, you keep using new things, and so you keep having troubles. If you can go next door and say, 'Hey, I was doing this and something strange happened, do you know what I did wrong?' Usually somebody in your neighborhood will be able to help you. If instead, you are far away, you are stuck.... We tried to develop some way of helping remote users.... Well, we never did. So in fact, we failed to make the computer truly accessible regardless of the location of the user."[29]

Other computer networking efforts like the creation of the ARPAnet, of Usenet, and of the uucpnet that transported it, the gatewaying of Usenet with the ARPAnet, and the creation of the NSF backbone for the Internet, helped to solve the important problem left unsolved by Project MAC. This growing network, and particularly the Usenet newsgroups and IRC chat give computer folk who have access to them a way to post their problems, to get help, and to share the solutions they have figured out, so people can benefit from others experiences. Usenet and IRC chat have thus followed in the footsteps of Project MAC and other early time-sharing systems and have created an online supercommunity of communities of computer users. What the Centennial conference at MIT and the early time-sharing work (along with subsequent developments like Unix and Usenet) show, is that the creation of the current global computer network is not the result of some science fiction dream. Rather the global network is the result of scientific and engineering experimentation and the creation of models based on the real world prototypes that the experimental mode produces. What then is the value of identifying the real roots of the Net in trying to determine the future of the Global Computer Communications Network? How can knowing this past history help to guide the work for the future?

Recalling the admonition of C. P. Snow at the MIT Centennial

conference, that the more people involved in trying to solve important social problems, the more likely the solution will be beneficial to society, rather than harmful, reminds us that there is a need to involve the broadest possible number of people in the problem of expanding and determining the future of the Net. Also, the legacy of the MIT pioneers of time-sharing is not only the development of time-sharing, it is also the lesson that it is important to create the prototype of what one is trying to develop, and to build one's vision for the future on what the real models show is possible. Fortunately, such prototypes have been created.

The NTIA conference, using mailing lists and Usenet newsgroups, to have a broad reaching online discussion, created a prototype for how ubiquitous networking can be achieved more broadly within the U.S. and elsewhere.

The NTIA conference demonstrated that in the involvement of the many the important problems of our times can be analyzed so they can be solved. And the Internet and Usenet news, vital components of the Global Computer Network, are providing important means for the people of our society to contribute to the needed discussion to determine what decisions will be helpful or harmful concerning the future of the Net.

Even though the NTIA conference meant a much broader section of people than ever before were able to participate in the policy discussion over the future of the Net, one of the participants explained why this process was only a prototype of what was needed. He wrote: "I think this conference was accessible to more than just "elite technocrats. I, for instance, am a graduate student at the U of MN. I have access because everyone who attends the University has access, and can apply their access via numerous computer labs that are open to all students. I think a lot of people don't realize that we're at a very critical point with determining the future of resources such as the Internet. I join you in hoping that no irreversible decisions are made on the basis of this conference — there needs to be a much wider opportunity for public comment."[30]

Epilogue

What was the significance of the NTIA conference toward helping

to determine what direction government policy should take regarding the future of the Net?

When the NTIA conference was held in Nov. 1994, many of the participants expressed their dissatisfaction with the plan of the U.S. government to turn the backbone of the U.S. portion of the Internet over to private and commercial interests by May 1, 1995. Despite the many questions raised about the objectives of U.S. policy by those participating in the online conference, and despite the fact that the stated goal of the conference was to involve citizens in helping to formulate policy objectives, the U.S. government ignored the concerns and voices raised during the online conference, and went ahead with their plans to privatize the U.S. portion of the backbone of the Internet.

The plans for the policy the U.S. government carried out had been formulated at a by-invitation-only meeting at the J. F. K. School of Government in March 1990.** This points up the discrepancy between the stated NTIA objectives of opening policy decisions up to public discussion and input versus the actual deeds of the U.S. government of implementing a policy which had been formulated at a private by-invitation-only meeting and which ignored the concerns and needs of the people the policy would affect. Also, on May 1, 1995, there was a public program at the Mid-Manhattan branch of the New York Public Library. The program was about the importance of the Net to people around the world and about the future potential of this new means of communication.

At that meeting, people expressed their concern that the U.S. government would try to impede access to this important resource, rather than help to make it more broadly available. Also, many urged that another meeting be set up to discuss what to do to make this important new resource available to a broader sector of the population.

One of the difficult dilemmas of our times is how to deal with the disparity between government words that they want input into policy decisions, and their actions of ignoring that input. The 1961 MIT Conference on the Future of the Computer, however, which occurred at a similar turning point in the development of the computer, provides helpful perspective. When one doesn't know what the future will be in the short term or the long term, as one participant at that conference

pointed out, it is especially important to decide what type of future it was to encourage and to work to make that future a reality. Also at the MIT Conference, C.P. Snow emphasized the importance of having important policy issues discussed by a large number of people and he expressed the conviction that such discussion would eventually have an effect on policy. In addition, those at the MIT Conference expressed a concern that when governments deal with important matters regarding technology and computers, those who have some understanding of the important issues at stake be involved in the decision making process.

The NTIA conference achieved two important results. It clarified that when people have online access and are invited to participate in a public policy discussion of an important issue, they will contribute in a way that identifies the important principles to shape that public policy. The second result was that it demonstrated that the U.S. government policy of privatizing the U.S. portion of the Internet is at odds with the principles clarified during the NTIA online conference called to provide public input into that policy. The online conference also demonstrated that there is a need to take up the challenge to make the future one that will serve the principles of broad and ubiquitous access. The online conference established the principles, but there is now a need to maintain an ever widening public discussion of these issues and to work to determine how to implement those principles.

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From: Michael Hauben <hauben@columbia.edu>
To: redefus@virtconf.ntia.doc.gov
Cc: avail@virtconf.ntia.doc.gov
Subject: Netizen Speech
Message-ID:
 <199411230549.AA14335@aloha.cc.columbia.edu>

3. Date: Mon, 14 Nov 1994 09:07:56 -0800
From: NTIA Virtual Conference <ntia>

Message-Id: <199411141707.JAA06933@virtconf.digex.net>
To: avail, intellec, opnacces, privacy, redefus, standard
Subject: NTIA Virtual Conference KeyNote Address

4. James McDonough, ep@access.digex.net,
Message-Id:
<Pine.SUN.3.91.941116094225.11331A-100000@access2. digex.net>

5. From: "Cynthia S. Terwilliger" <twigs@umich.edu>
Date: Nov 15 20:42:07 1994
Subject: Re: [AVAIL:32]
Re: Key Issues of Affordability and Availability
Message-ID:
 <Pine.3.89.9411152007.B7150-0100000@sils.umich.edu>

6. Date: Tue, 15 Nov 1994 00:27:42 GMT
From: ab368@virgin.uvi.edu (Bruce Potter)
Message-ID: <1994Nov15.002742.7646@virgin.uvi.edu>
To: avail@virtconf.ntia.doc.gov
Subject: Need for Federal Oversight of Access and
Availability (For Island Resources Foundation,
 iresource@aol.com)

7. San Francisco Public Library,
"SFPL::NTIA_PUB"@DRANET.DRA.COM
Message-Id:
 <941116184335.20212906@DRANET.DRA.COM>

8. From: Sean <sconnell@silver.ucs.indiana.edu>
Subject: Re: [AVAIL:41] my question
Date: Wed, 16 Nov 1994 00:33:24 -0500 (EST)
Message-Id: <199411160841.AAA27213@virtconf.digex.net>

9. From: jdyer@Hopper.ITC.Virginia.EDU (Jamie Dyer)
Subject: Internet Broadcasting Corp
Message-ID: <CzIIDo.96q@murdoch.acc.Virginia.EDU>
Organization: University of Virginia
Date: Sat, 19 Nov 1994 11:25:00GMT

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Message-Id: <199411170359.TAA09478@virtconf.digex.net>

11. From: az908@freenet.carleton.ca (Paul Holden)

Newsgroups: alt.ntia.redefus
Subject: Universal Access and the Feds...
Reply-To: redefus@virtconf.ntia.doc.gov
Date: Wed Nov 23 22:01:42 1994

12. San Francisco Public Library,
"SFPL::NTIA_PUB"@DRANET.DRA.COM

13. Frank D. Bastiaans, Statistical Analyser, Division Trade and Transport
Date: 16 Nov 1994 16:35:56 MET
Subject: Availability of statistics
Reply-To: FBSS@cbs.nl
Message-Id: <81430000.00000000006A.FBSS.Z9H374IJ>

14. From: Alexander Voiskounsky <vae@motiv.cogsci.msu .su> Psychology
Department, Moscow State University
Newsgroups: alt.ntia.redefus
Subject: Re: [AVAIL & REDEFUS]
Date: Sat Nov 19 09:24:42 1994

15. From: evote@netcom.com (Marilyn Davis)
Message-Id:
 <199411150111.RAA27335@netcom12.netcom.com>
Subject: Not Information ---> COMMUNICATION
To: redefus@virtconf.ntia.doc.gov
Date: Mon, 14 Nov 1994 17:11:07 -0800 (PST)

16. From: Michael Hauben <hauben@columbia.edu>
Newsgroups: alt.ntia.avail
Subject: Need to stress concept of active communication and interconnection
Reply-To: avail@virtconf.ntia.doc.gov
Date: Tue Nov 22 05:03:13 1994

17. From: "W. Curtiss Priest"
 <BMSLIB@MITVMA.MIT.EDU>

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 <MCDANIEL@wvuadmin3.csc.wvu.edu>

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* The NTIA Virtual Archives are available via the World Wide Web at: **http://ntiaunix2.ntia.doc.gov:70/11s/virtual**.

** RFC 1192 "Commercialization of the Internet: Summary Report", Nov. 1990, describes the by-invitation-only meeting that was held at the Kennedy School of Government in March 1990 to set plans for the commercialization and privatization of the Internet.

In Honor of 'Doc' Wilson (1910-1995)

[Editor's Note: Cartoons by 'Doc' Wilson have appeared in various issues of the *Amateur Computerist*. Sadly, 'Doc' died on July 29, 1995. The following article with minor changes was originally printed in the *Searchlight*, newspaper of UAW Local 659, May 25, 1984. It also was included in the booklet *Tough Cookies: Pioneers of the Flint Labor Press*, in 1985, which contains 22 of 'Doc' Wilson's cartoons.]

THE TRADITION OF LABOR CARTOONING AND DOC WILSON

The labor cartoons drawn over the years by Doc Wilson chronicle how the struggle for industrial unionism has been an ongoing and relentless battle. It was in the depression days of 1933 when the notice to start work at GM arrived at the Wilson home. Doc had come home tired after tramping the streets all afternoon in search of work. He hadn't had a steady job for two or three years.

When he hired in at Chevrolet on July 13, 1933, working conditions were awful. "It was slave labor," remembered Doc during an interview. "Of course," he explained, "the auto industry was still in its infancy – you had to start somewhere. But it got worse. It got to the point where people had to rebel."

Doc worked as a truck driver for GM. His own working situation wasn't so bad, but he saw the conditions in the plants and knew there had to be some change. "The day of the strike," Doc recalled, "I came in with a load from Bay City. I knew what was coming, but I didn't know when. After I unloaded, I clocked out and went to the union headquarters."

Doc helped to put out *Punch Press*, the newsletter which appeared during the Flint Sit-Down Strike of 1936-37 to keep supporters of the strike informed of what was happening. Doc's first published cartoons had to appear anonymously. "I really couldn't sign 'em in those days," he explained. "They could still fire you too easy."

By the mid 1940s, signed cartoons, like one criticizing the "No

Strike Pledge" appeared in Doc's local union newspaper *The Search-light*. Doc's cartoons were regularly featured in other Flint labor papers like *The Headlight*, (newspaper of UAW-Local 599), and *The Flint Weekly Review*. Sometimes the cartoon was reprinted, but the caption changed to reflect a slightly different situation. Doc's cartoons were copied and reprinted in labor papers around the country, "Published in more than 200 newspapers at one time or another," noted Doc.

In 1948, Doc Wilson started a regular cartoon series that he called "Plant Life." The chief protagonist of the series is Perry, a "graduate cum laude from the school of hard knocks in factory life." Through his hero, Perry, the cartoonist was able to comment on the dangers and frustrations of factory life. "Sometimes," Doc explained, "the ideas for Plant Life came straight from experience."

Many of Doc Wilson's cartoons were critical of corporate policies and practices. Other cartoons, however, took up to comment on union questions. One cartoon captioned "Just Pin Money" opposed a dues increase. It got Doc into hot water with the International Union. Another cartoon captioned "It Still Smells" shows a dissatisfied worker throwing a newly negotiated Ford Pension Agreement into the trash and holding his nose. This cartoon again drew the ire of the International Officers of the UAW. "Oh, it was about the time we got our first retirement plan," Doc explained. "It wasn't quite as good as I thought it should be." Despite such difficulties, Doc persisted. He went on with constant and sustained efforts via his cartoons, until pensions, and then the "30 and Out" retirement program had been won for UAW retirees. "I guess I realized the need for it years before our leaders did," he explained.

Through it all, Doc Wilson contributed to a rich tradition of labor cartooning, one that he helped to develop and spread. Bob Travis, a pioneer organizer and one of the founders of the UAW, commented on the importance of Doc's cartoons in the development of the UAW in a letter he wrote to one of Flint's labor papers. "Doc," wrote Travis, "was the cartoonist for the original *Auto Worker* – way back, over forty years ago. I've always felt that his cartoons contributed significantly to our victory. To Doc, I'd like to suggest that he publish a book carrying his cartoons chronologically. It would really show the rise of the UAW and the history of all our struggles." (from *The Headlight*, May 31, 1978)

Doc looked back fondly on his years of cartooning while working as a truck driver at Chevrolet. "Sometimes," he admitted, "I miss my days drawing cartoons .... Sometimes I'd sit up half the night making sketches and then get up to go to work the next morning. But I loved every minute of it."

Doc retired from Chevrolet in 1968 on the UAW pension that he was so active in fighting for. Upon his retirement, the staff of *The Searchlight* made him an honorary lifetime member of the Local's Publicity Committee so that he "be allowed to continue to work with future committees in the years ahead." (See resolution *The Searchlight*, Feb. 29, 1968, p. 2) Doc tried to pull together the many cartoons he drew over the years to put them into some more permanent form. "You know," he said, "a lot of these could still be used today 'cause there's still a lot of people suffering."

It is appropriate that pioneers like 'Doc' Wilson be remembered and their contribution be studied. One lesson that the Flint labor pioneers like 'Doc' never tired of repeating is, if you don't fight you can't win. 'Doc' Wilson always put his cartooning skill into the fight. Cartoons by 'Doc' Wilson have enhanced the *Amateur Computerist*. We will miss him a lot and still hope to see his cartoons properly collected into a big book.
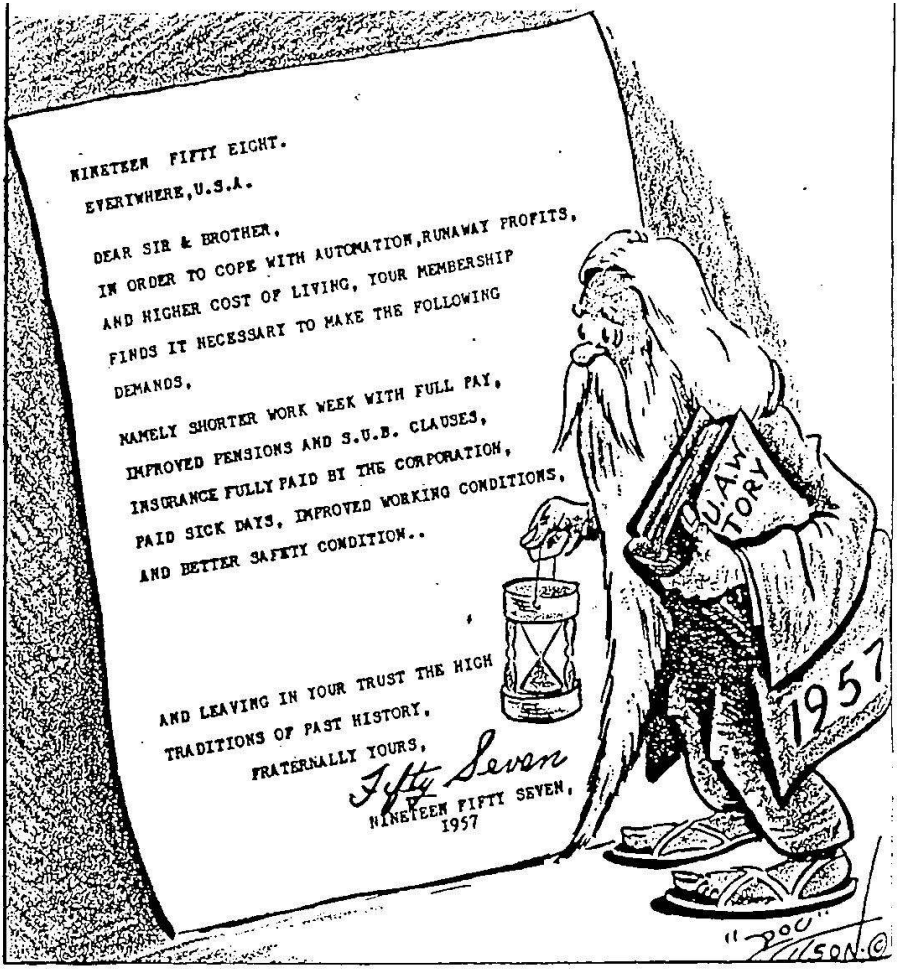
'DOC' WILSON

PLANT LIFE . . . . By 'Doc" Wilson

Holy Smokes, Chief! What's the House Un-American
Activities Gonna Say?