

Researching the "Net": A talk on The Evolution of Usenet News and The Significance of the Global Computer Network*

by Michael Hauben

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. Virtually you live next door to every other single Netizen in the world. Geographical separation is replaced by existence in the same virtual space.

The situation I describe is only a prediction of the future, but a large part of the necessary infrastructure currently exists. The Net - or the Internet, BITNET, FIDOnet, other physical networks, Usenet, VMSnet, and other logical networks and so on - has rapidly grown to cover all of the developed countries in the world. Every day more computers attach to the existing networks and every new computer adds to the user base - at least twenty five million people are interconnected today. Why do all these people pass their time sitting in front of a computer typing away? They have very good reason to! Twenty five million people plus have very good reason not to be wrong.

We are seeing a revitalization of society. The frameworks are being redesigned from the bottom up. A new more democratic world is becoming possible. According to one user, the Net has "immeasurably increased the quality of ... life." The Net seems to open a new lease on life for people. Social connections which were never before possible, or which were relatively hard to achieve, are now facilitated by the Net. Geography and time no longer are boundaries. Social limitations and conventions no longer prevent potential friendships or partnerships. In this manner Netizens are meeting other Netizens from far-away and close by that they might never have met without the Net.

A new world of connections between people - either privately from individual to individual or publicly from individuals to the collective mass of many on the net - is possible. The old model of central distribution of information from the Network Broadcasting or Publication Company is being questioned and challenged. The top-down model of information being distributed by a few for mass-consumption is no longer the only News. Netnews brings the power of the reporter to the Netizen. People now have the ability to broadcast their observations or questions around the world and have other people respond. The computer networks form a new grassroots connection that allows the excluded sections of society to have a voice. This new medium is unprecedented. Previous grassroots media have existed for much smaller-sized selections of people. The model of the Net proves the old way does not have to be the only way of networking. The Net extends the idea of networking - of making connections with strangers that prove to be advantageous to one or both parties.

The complete connection of the body of citizens of the world that the Net makes possible does not exist as of today, and it will definitely be a fight to make access to the Net open and available to all. However, in the future we might be seeing the possible expansion of what it means to be a social animal. Practically every single individual on the Net today is available to every other person on the Net. International connection coexists on the same level with local connection. Also the computer networks allow a more advanced connection between the people who are communicating. With computer-communication systems, information or thoughts are connected to people's names and electronic-mail addresses. On the Net, one can connect to others who have similar interests or whose thought processes they enjoy.

Netizens make it a point to be helpful and friendly - if they feel it to be worthwhile. Many Netizens feel they have an obligation to be helpful and answer queries and follow-up on discussions to put their opinion into the pot of opinions. Over a period of time the voluntary contributions to the Net have built it into a useful connection to other people around the world. The Net can be a helpful medium to understand the world. Only by seeing all points of view can any one person attempt to figure out either their own position on a topic or in the end, the truth.

Net Society differs from off-line society by welcoming intellectual activity. People are encouraged to have things on their mind and to present those ideas to the Net. People are allowed to be intellectually interesting and interested. This intellectual activity forms a major part of the on-line information that is carried by the various computer networks. Netizens can interact with other people to help add to or alter that information. Brain-storming between varieties of people produces robust thinking. Information is no longer a fixed commodity or resource on the Nets. It is constantly being added to and improved collectively. The Net is a grand intellectual and social commune in the spirit of the collective nature present at the origins of human society. Netizens working together continually expand the store of information worldwide. One person called the Net an untapped resource because it provides an alternative to the normal channels and ways of doing things. The Net allows for the meeting of minds to form and develop ideas. It brings people's thinking processes out of isolation and into the open. Every user of the Net gains the role of being special and useful. The fact that every user has his or her own opinions and interests adds to the general body of specialized knowledge on the Net. Each Netizen thus becomes a special resource valuable to the Net. Each user contributes to the whole intellectual and social value and possibilities of the Net.

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II. Licklider, the Visionary

The world of the Netizen was envisioned some twenty five years ago by J.C.R. Licklider and Robert Taylor in their article "The Computer as a Communication Device" (Science and Technology, April 1968). Licklider brought to his leadership of the US Department of Defense's Advanced Research Projects Agency (ARPA) a vision of "the intergalactic computer network." Whenever he would

speak of ARPA, he would mention this vision. J.C.R. Licklider was a prophet of the Net. In his article Licklider establishes several helpful principles which would make the computer play a helpful role in human communication. These principles were:

- 1) Communication is defined as an interactive creative process.
- 2) Response times need to be short to make the "conversation" free and easy.
- 3) The larger network would form out of smaller regional networks.
- 4) Communities would form out of affinity and common interests.

Licklider focused on the Net comprising of a network of networks. While other researchers of the time focused on the sharing of computing resources, Licklider kept an open mind and wrote:

"...The collection of people, hardware, and software - the multi-access computer together with its local community of users - will become a node in a geographically distributed computer network.....Through the network, therefore, all the large computers can communicate with one another. And through them, all the members of the supercommunity can communicate - with other people, with programs, with data, or with a selected combinations of those resources." (32)

Licklider's understandings from his 1968 paper have stood the test of time, and do represent what the Net is today. His concept of the sharing of both computing and human resources accurately describes today's Net. The networking of various human connections quickly forms, changes its goals, disbands and reforms into new collaborations. The fluidity of such group dynamics leads to a quickening of the creation of new ideas. Groups can form to discuss an idea, focus in or broaden out and reform to fit the new ideas that have resulted from the process.

The virtual space created on non-commercial computer networks is accessible universally. This space is accessible from the connections that exist; whereas social networks in the physical world generally are connected only by limited gateways. So the capability of networking on computer nets overcomes limitations inherent in non-computer social networks. This is important because it reduces the problems of population growth. Population growth no longer means limited. Rather that very growth of population now means an improvement of resources. Thus growth of population can be seen as a positive asset. This is a new way of looking at people in our society. Every new person can mean a new set of perspectives and specialties to add to the wealth of knowledge of the world. This new view of people could help improve the view of the future. The old model looks down on population growth and people as a strain on the environment rather than the increase of intellectual contribution these

individuals can make. However, access to the Net needs to be universal for the Net to fully utilize the contribution each person can represent. Once access is limited, the Net and those on the Net lose the full possible advantages the Net can offer. Lastly the people on the Net need to be active in order to bring about the best possible use of the Network.

Licklider foresaw that the Net allows for people of common interests, who are otherwise strangers, to communicate. Much of the magic of the Net is the ability to make a contribution of your ideas, and then be connected to utter strangers. He saw that people would connect to others via this net in ways that had been much harder in the past. Licklider observed as the ARPANET spanned two continents. This physical connection allowed for wider social collaborations to form. This was the beginning of Computer Data networks facilitating connections of people around the world.

My research on and about the Net has been and continues to be very exciting for me. When I posted my inquiries, I usually received the first reply within a couple of hours. The feeling of receiving that very first reply from a total stranger is always exhilarating! That set of first replies from people reminds me of the magic of E-Mail. It is nice that there can be reminders of how exciting it all is - so that the value of this new use of computers is never forgotten.

III. CRITICAL MASS

The Net has grown so much in the last 25 years, that a critical mass of people and interests has been reached. This collection of individuals adds to the interests and specialties of the whole community. Most people can now gain something from the Net, while at the same time helping it out. A critical mass has developed on the net. Enough people exist that the whole is now greater than any one individual and thus makes the Net worthwhile to be part of. People are meshing intellects and knowledge to form new ideas. Larry Press made this clear by writing:

"I now work on the Net at least 2 hours per day. I've had an account since around 1975 but it has only become super important in the last couple of years because a critical mass of membership was reached. I no longer work in LA, but in cyberspace."

Many inhabitants of the Net feel that only the most technically inclined people use the Net. This is not true, as many different kinds of people are now connected to the Net. While the original users of the Net were from exclusively technical and scientific communities, many of them found it a valuable experience to explore the Net for more than just technical reasons. The nets, in their early days, were only available in a few parts the world. Now however, people of all ages, from most parts of the globe, and of many professions, make up the Net. The original prototype networks (e.g.: ARPANet in the USA, NPL in the United Kingdom, CYCLADES in France and other networks around the world) developed the necessary physical infrastructure for a fertile social network to develop. Einar Stefferud wrote of this social

connection in an article,

"The ARPANET has produced several monumental results. It provided the physical and electrical communications backbone for development of the latent social infrastructure we now call 'THE INTERNET COMMUNITY.'" (ConneXions, Oct. 1989 vol 3 No. 10. pg.21)

Many different kinds of people comprise the Net. The University Community sponsors access for a broad range of people (students, professors, staff, professor emeritus, and so on). Programmers, engineers and researchers from many companies are connected. A K-12 Net exists within the lower grades of education which helps to invite young people to be a part of our community. Special Bulletin Board software (for example Waffle) exists to connect Personal Computer users to the Net. Various Unix bulletin board systems exist to connect other users. It is impossible to tell exactly who connects to public bulletin board systems, as only an inexpensive computer (or terminal) and modem are required to connect. Many common bulletin board systems (for example fido board) have at least e-mail and many also participate through a gateway to Netnews. Prototype Community Network Systems are forming around the world (e.g.: In Cleveland - the Cleveland Freenet, In New Zealand - the Wellington Citynet, In California, the Santa Monica Public Electronic Network, etc) Access via these community systems can be as easy as visiting the community library and membership is open to all who live in the community.

In addition to the living body of resources this diversity of Netizens represent, there is also a continually growing body of digitized data that forms a set of resources. Whether it is Netizens digitizing great literature of the past (e.g.: the Gutenberg Project), or it is people gathering otherwise obscure or non-mainstream material (e.g.: Various Religions, unusual hobbies, fringe and cult materials, and so on), or if it is Netizens contributing new and original material (e.g.: the Amateur Computerist Newsletter), the net follows in the great tradition of other public bottom-up institutions, such as the public library or the principle behind public education. The Net shares with these institutions that they serve the general populace. This data is just part of the treasure. Often living Netizens provide pointers to this digitized store of publicly available information. Many of the network access tools have been programmed with the principle of being available to everyone. The best example is the method of connecting to file repositories via FTP (file transfer protocol) by logging in as an "anonymous" user. Most (if not all) World Wide Web Sites, Wide Area Information Systems (WAIS), and gopher sites are open for all users of the Net. It is true that the current membership of the Net Community is smaller than it will be, but the net has reached a point of general usefulness no matter who you are.

All of this evidence is exactly why there could be problems if the Net comes under the control of commercial entities. Once commercial interests gain control, the Net will be much less powerful for the ordinary person than it is currently. Commercial interests vary from those of the common person. They attempt to make profit from any available means. Compuserve is an example of

one current commercial network. A user of Compuserve pays for access by the minute. If this scenario would be extended to the Net of which I speak, the Netiquite of being helpful would have a price tag attached to it. If people had had to pay by the minute during the Net's development, very few would have been able to afford the network time needed to be helpful to others.

The Net has only developed because of the hard work and voluntary dedication of many people. It has grown because the Net is under the control and power of the people at a bottom-level, and because these people have over the years made a point to make it something worthwhile. People's posts and contributions to the Net have been the developing forces.

IV. Network as a New Democratic Force

For the people of the World, the Net provides a powerful way of peaceful assembly. Peaceful Assembly allows for people to take control over their lives, rather than that control being in the hands of others. This power has to be honored and protected. Any medium or tool that helps people to hold or gain power is something that is special and has to be protected. (See "The Computer as Democratizer", Amateur Computerist Newsletter, Vol 4, No 5, Fall 1992)

J.C.R. Licklider believed that access to the then growing information network should be made ubiquitous. He felt that the Net's value would depend on high connectivity. In his article, "The Computer as a Communication Device", Licklider argues that the impact upon society depends on how available the network is to the society as a whole. He wrote:

"For the society, the impact will be good or bad depending mainly on the question: Will 'to be on line' be a privilege or a right? If only a favored segment of the population gets a chance to enjoy the advantage of 'intelligence amplification,' the network may exaggerate the discontinuity in the spectrum of intellectual opportunity."

The Net has made a valuable impact to human society. I have heard from many people how their lives have been substantially improved via their connection to the Net. This enhancement of people's lives provides the incentive needed for providing access to all in society. Society will improve if net access is made available to people as a whole. Only if access is universal will the Net itself truly advance. The ubiquitous connection is necessary for the Net to encompass all possible resources. One Net visionary responded to my research by calling for universal access. Steve Welch wrote:

"If we can get to the point where anyone who gets out of high school alive has used computers to communicate on the Net or a reasonable facsimile or successor to it, then we as a society will benefit in ways not currently understandable. When access to information is as ubiquitous as access to the phone system, all hell will break loose. Bet on it."

Steve is right, "all hell will break loose" in the most positive of ways imaginable. The philosophers Thomas Paine, Jean Jacques Rousseau, and all other fighters for democracy would have been proud.

Similar to past communications advances such as the printing press, mail, and the telephone, the Global Computer Communications Network has already fundamentally changed our lives. Licklider predicted that the Net would fundamentally change the way people live and work. It is important to try to understand this impact, so as to help further this advance.

* A speech give to the Columbia University student ACM Chapter on 4/24/94 based on THE NET AND NETIZENS: The Impact the Net has on People's Lives. originally available as chapter 7 of the netbook "The Netizens and the Wonderful World of the Net: An Anthology" at http://www.columbia.edu/~hauben/project_book.html.