Chapter 1
The Net and Netizens:
The Impact the Net has on People's Lives

by Michael Hauben

Preface

Welcome to the 21st Century. You are a Netizen (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.[1] Everyday more computers attach to the existing networks and every new computer adds to the user base at least twenty seven 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. As one user observed, the Net has "immeasurably increased the quality of…life." The Net seems to open a new lease on life for people. Social connections which never before were possible, or relatively hard to achieve, are now facilitated by the Net. Geography and time are no longer 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 distribution of information from the central Network Broadcasting 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 yet exist, and it will be a struggle 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 followup 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. When I posted the question, "Is the Net a Source of Social/Economic Wealth?" many people responded. Several corrected my calling the net a source of accurate information. They pointed out that it was also a source of opinions. However, the reader can train himself to figure out the accurate information from the breadth of opinions. Presented here is an example of the broadness of views and opinion which I was able to gather from my research on the Net. The Net can be a helpful medium to understand the world. Only by seeing all points of view can anyone attempt to figure out his or her position on a topic.

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. Brainstorming 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.

Introduction

The world of the Netizen was envisioned more than twenty five years ago by J. C. R. Licklider. Licklider brought to his leadership of the Department of Defense's ARPA Information Processing Techniques Office (IPTO) a vision of "the intergalactic computer network." Whenever he would speak from ARPA, he would mention this vision. J. C. R. Licklider was a prophet of the Net. In the paper, "The Computer as a Communication Device", which Licklider wrote with Robert Taylor, they established several principles from their observations of how the computer would play

a helpful role in human communication.[2] They clarified their definition of communication as a creative process differentiating between communication and the sending and receiving of information. When two tape recorders send or receive information to each other that is not communication. They wrote: "We believe that communicators have to do something non-trivial with the information they send and receive. And to interact with the richness of living information – not merely in the passive way that we have become accustomed to using books and libraries, but as active participants in an ongoing process, bringing something to it through our interaction with it, and not simply receiving from it by our connection to it. We want to emphasize something beyond its one-way transfer: the increasing significance of the jointly constructive, the mutually reinforcing aspect of communication – the part that transcends 'now we both know a fact that only one of us knew before.' When minds interact, new ideas emerge. We want to talk about the creative aspect of communication."[3]

Licklider and Taylor defined four principles for computers to make a contribution towards human communication. They are:
1. Communication is defined as an interactive creative process.
2. Response times need to be short to make the "conversation" free and easy.
3. Larger networks would form out of smaller regional networks.
4. Communities would form out of affinity and common interests.

Licklider and Taylor's understandings from their 1968 paper have stood the test of time, and do represent the Net today. In a later paper Licklider co-wrote with Albert Vezza, "Applications of Information Networks"[4], they explore the possible business applications of information networks. Licklider and Vezza's survey of business applications in 1978 come short of the possibilities Licklider and Taylor outlined in their 1968 paper, and represent but a tiny fraction of the resources the Net currently embodies.

In the 1968 paper, Licklider and Taylor focused on the Net being comprised of a network of networks. While other researchers of the time focused on the sharing of computing resources, Licklider and Taylor 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. Let us assume for a moment that such a network has been formed. Through the network of message processors, therefore, all the large computers can communicate with one another. And through them, all the members of the super community can communicate – with other people, with programs, with data, or with a selected combinations of those resources."[5]

Their concept of the sharing of both computing and human resources together matches the modern 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 been worked out.

Netnews, IRC, mailing lists and mud/mush/moo/m** (various of the available discussion

tools on the Net) are extremely dynamic. Most can be formed immediately for either short or long term use. As interests or events form, discussion groups can be created. (e.g., The mailing list 9NOV89-L about Germany after the fall of the Berlin Wall in November, 1989, and about German unification.)

The virtual space created on noncommercial computer networks is accessible universally. The content on commercial networks, like Compuserve or America On-Line, is only accessible by those who pay to belong to that particular network. The space on noncommercial networks is accessible from the connections that exist, whereas social networks in the physical world generally are connected 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 need not mean limited resources any more – 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. As long as access is limited – the Net and those on the Net, lose the full 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 Net.

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 was very exciting for me. When posting 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 this new form of communication really is – so that the value of this new use of computers is never forgotten.

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Critical Mass

The Net has grown so much in the since its birth in the 1960's 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. There are enough people on-line now, that anyone coming on-line will find something of interest. 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 L.A., but in cyberspace."

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. Today, many different kinds of people are connected to the Net. The original users of the Net (then several test-beds of network research) were from only a few parts of the world. Now 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, the network of the National Physical Laboratory 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. First, it provided the physical and electrical communications backbone for development of the latent social infrastructure we now call 'THE INTERNET COMMUNITY.'"[6]

Many different kinds of people comprise the Net. The university community sponsors access for a broad range of people (i.e., students, professors, staff, professor emeritus, etc.). Many businesses are also connected. A "K-12 Net" exists which invites younger people to be a part of the online community. Special bulletin board software exists to connect personal computer users to the Net. Various Unix bulletin board systems exist to connect other users. It is virtually impossible to tell what kinds of people connect to public bulletin board systems, as only a computer (or terminal) and modem are the prerequisites to connect. Many if not all Fidonet BBS's (a very common BBS type) 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., Cleveland Free-Net, Wellington Citynet, Santa Monica Public Electronic Network (PEN), Berkeley Community Memory Project, Hawaii FYI, National Capitol Free-Net and others in Canada, 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 represents, there is also a continual growing body of digitized data that forms another body of resources. Whether it is Netizens digitizing great literature of the past (e.g., the Gutenberg Project, Project Bartleby), or it is people gathering otherwise obscure or non-mainstream material (e.g., various religions, unusual hobbies, gay lifestyle, fringe.), or if it is Netizens contributing new and original material, the Net follows in the great tradition of other public 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 created 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 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 it is a problem for the Net to come 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 hour. If this scenario would be extended to the Net of which I speak, the Netiquette of being helpful would have a price tag attached to it. If people 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 in the control and power of the people at the grassroots level, and because these people developed it. People's posts and contributions to the Net have been the developing forces.

Grassroots

The Net brings people together. People put into connection with other people can be powerful. There is power in numbers. The Net allows an individual to realize his power. The Net, uncontrolled by commercial entities, becomes the gathering, discussion and planning center for many people.

The combined efforts of people interested in communication has led to the development and expansion of the global communications system. What's on the Net? Well – Usenet, Free-Net, e-mail, library catalogs, ftp sites, free software, electronic newsletters and journals, Multi-User Domain/Dungeon (mud)/mush/moo, Internet Relay Chat (IRC), the multimedia world wide web (WWW) and many kinds of data banks. Different servers, like WWW, WAIS, and gophers attempt to order and make utilizing the vast varieties and widespread information easier. There exist both public and private services and sources of information. The public and free services often come about through the voluntary efforts of one or a few people. These technologies allow a person to help make the world a better place by making his or her unique contribution available to the rest of the world. People who have been overlooked or have felt unable to contribute to the world, now can. Also, these networks allow much more open and public interaction over a much larger body of people than available before. The common people have a unique voice which is now being aired in a new way.

The emphasis is that this new machine introduces every single person as someone special and in possession of a useful resource.

Netizen Comments on Grassroots:

"Simple by access to a vast amount of information and an enormous number of brains!" Brian May

"For a geographically sparse group as it is, MU* allows people to get to know one another,

the relevant newsgroup gives a sense that there's a community out there and things are happening, and an associated ftp site allows art and writing to be distributed." Simon Raboczi

"In summary, nets have helped enormously in the dissemination of information from people knowledgeable in certain areas which would be difficult to obtain otherwise." Brent Edwards

"I get to communicate rapidly and cheaply with zillions of people around the world." Rosemary Warren

The following examples help to show how this is possible. People are normally unprotected from the profit desires of large companies. Steven Alexander from California was using the Net to try to prevent over charging at gas stations. This is an example of the power of connecting people to uphold what is fair and in the best interest of the common person in this society.

From: Steven Alexander
"I have started compiling and distributing (on the newsgroup ca.driving) a list of gas prices at particular stations in California to which many people will contribute and keep up to date, and which, I hope, will allow consumers to counteract what many of us suspect is the collusive (or in any case, price-gouging) behavior of the oil companies."

A user from Germany also reported using the Net to muckrake. He writes: "A company said they were a [nonprofit organization]. Someone looked them up in the [nonprofit] Register, and they did not exist there. Someone else said that he had contact with the person who sent the letter, only under another company-name, and that he simply ignored this person since he looked like a swindler. So they are swindlers, and people from the Net proved it to us, we then of course did not engage with them at all."

The Net has proven its importance in other contemporary critical situations. As the only available line of communications with the rest of the world, the Net helped defeat the attempted coup in the ex-Soviet Union in 1990. The members of the coup either did not know about or understand the role the Russian RELCOM network could play or the connections proved resilient enough for information about the coup to be communicated inside and out of the country in time to inform the world and encourage resistance to the coup.[7]

The Net has also proven its value by providing an important medium for students. Students participating in the Chinese Pro-Democracy movement have kept in touch with others around the world via their fragile connection to the Net. The Net provided an easy way of evading government censors to get news around the world about events in China and to receive back encouraging feedback. Such feedback is vital support to keep the fight on when it seems impossible or wrong to do so. In a similar way, students in France used the French Minitel system to organize a successful fight against plans by the French government to restrict admission to government subsidized universities.

The information flow on the Net is controlled by those who use the Net. People actively

provide the information that they personally and other people want. There is a much more active form of participation than what is provided for by other forms of mass media. Television, radio, magazines are all driven by those who own and determine who will write for them. The Net gives people a media they can control. This control of information is a great power that has not been available before to the common everyday person. For example, Declan McCreesh describes how this makes possible access to the most up to date information.

From: Declan McCreesh
   " You get the most up to date info. that people around the world can get their hands on, which is great. For instance, the media report who wins a Grand Prix, what happened and not a great deal more. On the net, however, you can get top speeds, latest car and technology developments, latest rumors, major debates as to whether Formula 1 or Indy cars are better etc."
   The Net helps to make the information available more accurate because of the many-to-many or broadcast and read and write capability. That new capability, which is not normally very prevalent in our society, allows an actual participant or observer to report something. This capability gives the power of journalism or the reporter to the individual. This new medium allows the source to report. This is true because the medium allows everyone on-line to make a contribution. The old media instead controls who reports and what they say. The possibility of eyewitness accounts via the net can make the information more accurate. Also this opens up the possibility for a grassroots network. Information is passed from person to person around the world. Thus German citizens could learn about the Chernobyl explosion from the Net before the government decided to release the information to the public via the media. The connection is people to people rather than governments to governments. Citizen Journalists can now distribute to more than those they know personally. The distribution of the writings of ordinary people is the second step after the advent of the inexpensive personal computer in the early 1980s. The personal computer and printer allowed anyone to produce mass quantities of documents. Personal publishing is now joined by wide personal distribution.

   Not only is there grassroots reporting, but the assumption that filtering is necessary has been challenged. People can learn to sort through the various opinions themselves. Steve Welch disagreed that the Net is a source of more accurate information, but agreed that people develop discriminatory reading skills.

From: Steve Welch:
   "When you get more information from diverse sources, you don't always get more accurate information. However, you do develop skills in discerning accurate information. Or rather, you do if you want to come out of the infoglut jungle alive."

   Governments that rule based on control of information will succumb eventually to the tides of democracy. As Dr. Sun Yat-Sen of the Chinese Democracy Movement once said, "The worldwide democratic trend is mighty. Those who submit to it will prosper and those who resist it will perish." The Net reintroduces the basic idea of democracy as the grassroots people power of Netizens. Governments can no longer easily keep information from their people.

Many groups which do not have an established form of communications available to them have found the Net to be a powerful tool. For example, for people far away from their homeland, the Net provides a new link.

From: Godfrey Nolan

"The Net has immeasurably increased the quality of my life. I am Irish, but I have been living in England for the past five years. It is a lot more difficult to get information about Ireland than you would expect. However a man called Liam Ferrie who works in Digital in Galway, compiles a newspaper on the weeks events in Ireland and so I can now easily keep abreast of most developments in Irish current affairs, which helps me feel like I'm not losing touch when I go home about twice a year. It is also transmitted to about 2000 Irish people all over the first and third worlds."

From: Madhur K. Limdi

"I read your above posting and wanted to share my experience with you. I have been a frequent reader of news in Usenet groups, such as soc.culture.indian, misc.news.southasia. Both of these keep me reasonably informed about the happenings in my home country India."

Also in the United States, the Net has provide stable communications for people of various religious and sexual persuasions. Many other communities have also found the Net to be a excellent medium to help increase communications:

From: Gregory G. Woodbury

"We will be going to a march on Washington and are coordinating our plans and travel with a large number of other folks around the country via e-mail and conversations on Usenet."

From: Jann VanOver

"I'm a member of a Buddhist organization and just found a man in Berkeley who keeps a Mailing List that sends daily guidance and discussions for this group. So I get a little religious boost when I log on each day."

From: Carole E. Mah

"For me and for many of my friends, the Net is our main form of communication. Almost every aspect of interpersonal communication on the network has a gay/lesbian/bi aspect to it that forms a tight and intimate acquaintanceship which sometimes even boils over into arguments and enmities. This network of connections, friends, enemies, lovers, etc. facilitates political goals that would not otherwise be possible (organizing letter-writing campaigns about the Gays in the Military Ban via the ACT-UP list, being able to send e-mail directly to the White House, finding out about activism, bashing, etc. in other states and around the world, etc)."

From: Robert Dean

"As a member of the science fiction community, I've met quite a few people on the net, and then in person."

Communication with New People

In many Netizens' lives the Net has alleviated feelings of loneliness, which seem common in today's society. The Net's ability to help people network both socially and intellectually makes the Net valuable and irreplaceable in people's lives. This is forming a group of people who want to keep the Net accessible and open to all.

The Net brings together people from diverse walks of life, and makes it easier for these people to communicate. It brings them all together into the same virtual space and removes the impact or influence of first impressions.

Malcolm Humes writes, "I'm in awe of the power and energy linking thousands into a virtual intellectual coffee-house, where strangers can connect without the formalities of face to face rituals (hello, how are you today) to allow a direct-connect style of communication that seems to transcend the 'how's the weather' kind of conversation to just let us connect without the bullshit."

Strangers are no longer strange on the Net. People are free to communicate without limits, fears or apprehension. It used to be that there was a rather generous atmosphere that thrived on the Net and that welcomed new users. People were happy to help others, often as a return for the help they had received. Things have changed, and the general welcome to new-comers is not as universally friendly, but there are many on-line who still try and help new people. Others are nasty, but the goodwill still overpowers the unfriendly comments.

From: Jean-Francois Messier

"My use of the Net is to get in touch with more people around the world. I don't know for what, when, how, but that's important for me. Not that I'm in a small town, far from everybody, but that I want to be able to establish links with others. In fact, because of those nets I use, I would !NOT! want to go to a small town, just because the phone calls would be too expensive. I've to say that I'm not an expressive people. I'm not a great talker, nor somebody who could make shows. I'm more an 'introvert'."

Yet Jean-Francois wrote me. This is just one example of the social power of the Net. Another Netizen comments on how the Net helped her befriend strangers.

From: Laura Goodin

"Last summer I was traveling to Denver and I used a listserv mailing list to find out whether a particular running group I run with had a branch there. They did, and I had a wonderful time meeting people with a common interest (and drinking beer with them); I was no longer a stranger."

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Broadened and Worldly Prospective:

Easy connection to people and ideas from around the world has a powerful effect. Awareness that we are members of the human species which spans the entire globe changes a person's point of view. It is a broadening perspective. It is very easy for people to assume a limited point of view if

they are only exposed to certain ideas. The Net brings the isolated individual into contact with other people, experiences, and views from the rest of the world. Exposure to many opinions gives the reader a chance to actually consider multiple views before settling on a specific opinion. Having access to the "Marketplace of Ideas" allows a person to make a reasoned judgment.

For example, from: Jean-Francois Messier "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." He continues: "Because I have a much broader view of the world now, I changed and am more conciliatory and peaceful with other people. Writing to someone you never saw, changes the way you write, also, the instancy of the transmission makes the conversation much more 'live' than waiting for the damn slow paper mail. Telecommunications opened the world to me and changed my visions of people and countries."

From: Anthony Berno
"I could not begin to tell you how different my life would be without the Net. My life would be short about a dozen people, some of them central, I would be wallowing in ignorance on several significant subjects, and my mind would be lacking many broadening and enlightening influences."

From: Henry Choy
" More things to look at. Increased perspective on life. The computer network brings people closer together, and permits them to speak at will to a large audience. I recommend that the telecommunications and computer industry make large scale computer networking accessible to the general public. It's like making places accessible to the handicapped. People brought closer together will release some existing social tensions. People need to be heard, and they need to hear."

From: Paul Ready
"You don't have to go to another country to meet people from there. It is not the same as personally knowing them, but I always pay special attention to information from people outside the States. They are likely to have a different perspective on things."

From: Leandra Dean
"I love to study people, and the Net has been the best possible resource to this end. The Net is truly a window to the world, and without it we could only hope to physically meet virtually thousands of people every day to gain the same insights. I shudder to think about how different and closed in my life would be without the Net."

Material Changes to People's Lives and Lifestyles.

The time spent on-line can affect the rest of a person's life. The connections, interfaces or collaborations between times on and off line form an interesting area of study. Netizens attest to the

power of the Net by explaining the effect the Net has had on their lives. Because of the information available and the new connections possible, people have changed the way they live their lives. There are examples of both changes in the material possessions and changes in lifestyle. The changes in lifestyle are probably the more profound changes, but the new connections made possible are important. Often the material gains are not financial. Rather worthwhile goods can be redistributed from those to whom the goods might have lost personal value to those who would value the goods.

Netizen Comments on Material Changes:
From: William Carroll
"Primarily because of the information and support from rec.bikes, three years ago I gave up driving to work and started riding my bike. It's one of the best decisions I've ever made."
A Response I received via e-Mail:

"When I started using ForumNet (a chat program similar to irc, but smaller – [Now called icb]) back in January 1990, I was fairly shy and insecure. I had a few close friends but was slow at making new ones. Within a few weeks, on ForumNet, I found myself able to be open, articulate, and well-liked in this virtual environment. Soon, this discovery began to affect my behavior in "real" face-to-face interaction. I met some of my computer friends in person and they made me feel so good about myself, like I really could be myself and converse and be liked and wanted."

"Of course, computer-mediated social interaction is not properly a crutch to substitute for face-to-face encounters, but the ability to converse via keyboard and modem with real people at the other end of the line has translated into the real-life ability for me to reach out to people without the mediating use of a computer. My life has improved. I wouldn't trade my experience with the Net for anything."

From: Jack Frisch
"I must begin my comments on the Internet with one simple yet significant statement: the availability and use of the Internet is changing my life profoundly."

From: Carole E. Mah
"I also used to facilitate a vegetarian list, which radically altered many people's lives, offering them access to mail-order foods, recipes, and friendship via net-contact with people who live in areas where non-meat alternatives are readily available."

From: Jann VanOver
"Well, the first thing I thought of is purchases I've made through the Net which have "changed my life" I drove my Subaru Station wagon until last fall when I acquired a VW Camper van that I saw on a local Net ad. I wasn't looking for a van, wasn't even shopping for another vehicle, but the second time this ad scrolled by me, I looked into it and eventually bought it. I will certainly say that driving a 23 year old VW camper van has changed my life! I thought I would be ridiculed, but have found that people have a lot of respect and admiration for this car!" Jann goes on to write "Through the Net, I heard that Roger Waters was going to perform "The Wall" again, an

event I had promised myself not to miss, so I made a trip to Berlin (East and West) in 1990 to see this concert. This was CERTAINLY a life changing event, seeing Berlin less than one week after the roads were open with no checkpoints required. I don't think I would have known about it soon enough if not for the Net."

From: Robert Dean

"As for me, my main hobby is and was playing wargames and role-playing games. Net access has allowed me to discuss these games with players across the world, picking up new ideas, and gathering opinions on new games before spending money on them. In addition, I've been able to buy and sell games via Net connections, allowing me to adjust my collection of games to meet my current interests, and get games that I no longer wanted to people who do want them, whether they live down the road from me in Maryland, or in Canada, Austria, Finland, Germany or Israel. I have also taken an Esperanto course via e-mail, and correspond irregularly in Esperanto with interested parties world wide."

From: Caryn K. Roberts

"Usenet & Internet are available to me at work and by dialup connection to work from home. I have been materially enriched by the use of the Net. I have managed to sell items I no longer needed. I have been able to purchase items from others for good prices. I have saved money and am doing my part to recycle technology instead of adding burdens to the municipal waste disposal service." Caryn continues: "Using the Net I have also been enriched by discussions and information found in numerous newsgroups from sci.med to sci.skeptic to many of the comp.* groups. I have offered advice to solve problems and have been able to solve problems I had by using information in these forums."

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The Net as a Source of Enormous Resources

Before the Net was widely seen as an enormous social network, some were experimenting with the sharing of computing resources. The following are some examples of ways Netizens utilize the information resources available on the Net.

From: Tim North

"I'm faculty here at University and I use the Net as a major source of technical information for my lectures, up-to-date product information, and informed opinion. As such I find that I am constantly better informed than the people around me. (That sounds vain, but it's not meant to be. It's simply meant to emphasize how strongly I feel that the Net is a superb information resource.)"

From: R. J. White

"I used the Net to find parts for my 1971 Opel GT. I was living in North America at the time, and going through the normal channels, like GM, are no good. The Net was like an untapped resource."

From: John Harper

"[My] uses of the network [1] I once asked a question about an obscure point in history of math. on the sci.math newsgroup and got a useful answer from Exeter, UK. Beforehand I had no idea where anyone knowing the answer might be. I had drawn a blank in Oxford. [2] I asked a question about a slightly less obscure point on comp.lang.fortran which generated a long (and helpful) discussion on the Net for a week or two."

From: Paul Ready
"Yes, it is a worldwide rapid distribution center of information, on topics both popular and obscure. It may not make the information more valuable, but it certainly increases the information, and the propagation of information. To those connected, it is a valuable resource. Flame wars aside, a lot of generally inaccessible information is readily available."

From: Lee Rothstein
"Usenet and mailing lists create a group of people who are motivated and capable of talking about a specific topic. The software allows deeply contextual conversations to occur with a minimum of rehash. As experience develops with the medium, each user realizes that the other that he talks to or will talk to generally help him/her, and can do him/her no harm because of the remoteness imposed by the cable."

From: Lu Ann Johnson
"Hi! Usenet came to my rescue I'm a librarian and was working with a group of students on a marketing project. They were marketing a make-believe product a compact disc of "music hits of the 70's". They needed a source to tell them how much it cost to produce a CD without mastering, etc. I exhausted all my print resources so I posted the question in a business newsgroup. Within hours I learned from several companies that it cost about $1.50 to produce a CD :) The students were very grateful to get the information."

From: Laura Goodin
"I teach self-defense, and in rec.martial-art someone posted information about a study on the effectiveness of Mace for self-defense that I had been looking for for years."

From: Cliff Roberts
"I have been using Internet through a program in New Jersey to bring the fields of Science and Math to grammar school children grades K-8. We have implemented a system where the class rooms are equipped with PC's and are able to dial in to a UNIX system. There they can send e-mail and post questions to a KidsQuest ID. The ID then routes the questions to volunteers with accounts on UNIX. The scientists then answer or give advice of where to find the information they want. Another well accepted feature is to list out the soc.penpals list and e-mail people in different countries that are being studied in the schools."

From: Joe Farrenkopf
"I think Usenet is a very interesting thing. For me, it's mostly just a way to pass time when bored. However, I have gotten some very useful things from it. There is one group in particular

called comp.lang.fortran, and on several occasions when I've had a problem writing a program, I was able to post to this group to get some help to find out what I was doing wrong. In these cases, it was an invaluable resource."

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Collective Work

As new connections are made between people more ideas travel over greater distances. This allows either like-minded people or complementary people to come in touch with each other. The varied resources of the networks allow these same people to keep in touch even if they would not have been able to be in touch before. Electronic mail allows enough detail to be contained in a message that most if not all communications can take place entirely electronically. This medium allows for new forms of collaborative work to form and thrive. New forms of research will probably arise from such possibilities. Here are some examples:

From: Wayne Hathaway

"One 'unusual' use I made of the Net happened in 1977. Along with five other 'Net Folks' I wrote the following paper: 'The ARPANET Telnet Protocol: Its Purpose, Principles, Implementation, and Impact on Host Operating System Design,' with Davidson, Postel, Mimno, Thomas, and Walden: Fifth Data Communications Symposium, Snowbird, UT; September 27-29, 1977. What's so unusual about a collaborative paper, you ask? Simply that the six of us never even made a TELEPHONE call about the paper, much less had a meeting or anything. Literally EVERYTHING – from the first ideas in a 'broadcast' mail to the distribution of the final 'troff-ready' version – was done with e-mail. These days this might not be such a deal, but it was interesting back then."

From: Paul Gillingwater

"...in Vienna was an on-line computer mediated art forum, with video conferencing between two cities, plus an on-line discussion in a virtual MUD-type conference later that evening."
A Response I received via e-mail:

"In response to your question about having fun on the net, and being creative, one incident comes to mind. I had met a woman on ForumNet (a system like IRC). She and I talked and talked about all sorts of things. One night, we felt especially artistic. We co-wrote a poem over the computer. I'd type a few words, she'd pick up where I left off (in the middle of sentences or wherever) and on and on. I don't think we had any idea what it was going to be in the end, thematically or structurally. In the end, we had a very good poem, one that I would try to publish if I knew her whereabouts anymore "

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Improving Quality of Everyday Life

Information flow can take various shapes. The strangest and perhaps most interesting one is how emotion can be attached to information flow. They often seem like two very different things. I received a large number of responses that reported real-life marriages arising from Net meetings. The Net facilitates the meeting of people of like interests. The newness of the Net means we cannot

fully understand it as of yet. However, it is worth noting that people have also broken up on-line. So while it is a new social medium, a range of dynamics will exist.

From: Caryn K. Roberts

"I have found friends on the Net. A lover. And two of the friends I met, also met online and got married. I attended the wedding (in California)."

From: Scott Kitchen

"I think I can add something for your paper. I met my fiancee 4 years ago over the net. I was at Ohio State, and she was in Princeton, and we started talking about an article of hers I'd read in rec.games.frp. We got to talking, eventually met, found we liked each other, and the rest is history. We were married 31 December 1994."

From: Gregory G. Woodbury

"I met the woman who became my wife when I started talking to the folks at "phs" (the third site of the original Usenet) during the development of Netnews. I would not have been wandering around that area if I hadn't been interested in the development of the net."

From: Laura Goodin

"And now, the BEST story: about eight months ago I was browsing soc.culture.australia and I noticed a message from an Australian composer studying in the US about an alternative tune to "Waltzing Matilda." I was curious, so I responded in e-mail, requesting the tune and just sort of shooting the breeze. We began an e-mail correspondence that soon incorporated voice calls as well. One thing led inexorably to another and we fell in love (before we met face to face, actually). We did eventually meet face to face. Last month he proposed over the Internet (in soc.culture.australia) and I accepted. Congratulatory messages came in from all over the United States, Australia, and New Zealand. Houston (that's his name) and I keep our phone bills from resembling the national debt by sending 10 or 12 e-mails a day (we're well over 1400 for eight months now), and chatting using IRC. A long-distance relationship is hellish, but the pain is eased somewhat by the Internet."

From: Chuq Von Rospach

"(oh, and in the "how the Net made my non-net life better" category, I met my wife via the net. Does that count?)"

Work

The fluid connections and the rapidly changing nature of the networks make the Net a welcome media for those who are job hunting and for those who have jobs to offer. The networks have a large turnover of people who are looking for jobs. The placement of job annoucements is easy and can be kept available for as long as the job is offered. E-mail allows for the quick and easy applications by sending resumes in the e-mail. Companies can respond quickly and easy to such submissions, also by e-mail. Besides finding work, the Net helps people who are currently working perform their job in the best manner. Many people utilize the Net to assist them with their jobs.

Several examples of both follow:

From: Laura Goodin
"My division successfully recruited a highly-qualified consultant (a Finn living in Tasmania) to do some work for us; the initial announcement was over Usenet; subsequent negotiations were through e-mail."

From: jj
"I've hired people off the net, and from meeting them in muds, when I find somebody who can THINK. People who can think are hard to find anywhere."

From: Diana Gregory
"I have learned to use UNIX, and as a result may be able to keep/advance in my job due to the 'net." From: Neil Galarneau "It helps me do my job (MS Windows programming) and it helps me learn new things (like C++)."

From: Kieran Clulow
"The Internet access provided me by the university has greatly facilitated my ability to both use and program computers and this has had the direct result of improving my grades as well as gaining me a good job in the computer field. Long live the Internet (and make it possible for private citizens to get access!)"

From: Mark Gooley
"I got my job by answering a posting to a news-group."

From: Anthony Berno
"I develop for NEXTSTEP, and the Net is very useful in getting useful programming hints, info on product releases, rumors, etcetera."

From: Gregory G. Woodbury
"Due to contacts made via Usenet and e-mail, I got a job as a consultant at BTL in 1981 after I lost my job at Duke. Part of the qualifications that got me in the door was experience with Usenet."

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Improved Communications with Friends

Another way of improving daily life is by making communications with friends easier. The ease of sending e-mail is bringing back letter writing. However, the immediacy of e-mail means less care can be made in the process of writing. E-mail, IRC and Netnews make it much easier to keep in touch with friends outside one's local area.

Netizen Comments on Improved Communications:
From: Bill Walker
"I also have an old and dear friend (from high school) who lives in the San Francisco area.

After I moved to San Diego, we didn't do very well at keeping in touch. She and I talked on the phone a couple of times a year. After we discovered we were both on the net, we started corresponding via e-mail, and we now exchange mail several times a week. So, the Net has allowed me to keep in much closer touch with a good friend. It's nothing that couldn't be done by phone, or snail mail, but somehow we never got around to doing those things. E-mail is quick, easy and fun enough that we don't put it off."

From: Anthony Berno
        "Incidentally, it is also one of my primary modes of communication with my sister (who lives in N.Z.) It's more meditative than a phone call, faster than a letter, and cheaper than either of them."

From: Carole E. Mah
        "It also facilitates great friendships. Most of my friends, even in my own town, I met on the network. This can often alleviate feelings of loneliness and "I'm the only one, I must be a pervert" feelings among queer people just coming out of the closet. They have a whole world of like-minded people to turn to on Usenet, on Bitnet lists, on IRC, in personal e-mail, on BBSs and AOL type conferences, etc."

From: Jann VanOver
        "Apart from purchases, I have been contacted by:
1.a very good friend from college who I'd lost track of. She got married to a man she met in a singles newsgroup (they've been married 2 years+)
2.someone who went to my high school, knew a lot of the same people I did, but we didn't know each other. We are now 'mail buddies'
3. an old girlfriend of my brothers. They went out for eight years, but I learned more about her from ONE e-mail letter than I had ever learned when meeting her in person."

From: Godfrey Nolan
        "Above all it helps me keep in touch with friends who I would inevitably lose otherwise. The Net helps those that move around for economic reasons to lessen the worst aspects of leaving your friends in the series of places that you once called home. It's the best thing since sliced bread."

Problems
        With all of the positive uses and advantages of the Net, it is still not perfect. The blind-view of people on the Net seems to shield everyone, but women. There is a relatively large male to female percentage population on the Net. Women on-line can feel the effects of this difference. Women who have easily identifiable user names or IDs are prone to be the center of much attention. While that might be good in itself, much of that attention can be of a hostile or negative nature. This attention might be detrimental to women being active on the Net. Net harassment can spread against other users too. People with unpopular ideas need to be strong to withstand the outlash of abuse they might receive from others.

The worst non-people problem seems to be information overflow. Information adds up very quickly and it can be hard to organize it all and sort through. This problem should be solvable as technology is now being developed to handle it.

From: Scott Hatton
"There is a problem with this brave new world in that a lot of people don't appreciate there's another human being at the other keyboard. Flaming is a real problem – especially in comp.misc. This is all a new facet of the technology as well. People rarely trade insults in real life like they do on Internet. There's a tendency to stereotype your opponent into categories. I think this is because you're not around to witness the results. I find this more on Internet newsgroups than on CompuServe. I think this is down to maturity – a lot of folk on the Internet are students who aren't paying for their time on the system. Those on CompuServe are normally slightly older, not so hot-headed and are paying for their time. Damn. Now I'm at stereotyping now. It just goes to show "

From: Joe Farrenkopf
"There is something else I've discovered that is really rather fascinating. People can be incredibly rude when communicating through this medium. For example, some time ago, I posted a question to lots of different newsgroups, and many people felt my question was inappropriate to their particular group. They wrote to me and told me so, using amazingly nasty words. I guess it's easier to be rude if you don't have to face a person, but can say whatever you want over a computer."
From: Brad Kepley "I get a little irritated with people always claiming someone else is 'wasting bandwidth' because they disagree with them. About half the time it turns out that the person being told to shut up was right after all. Then again, when you look at things like alt.binaries.pictures.erotica and other 'non-bandwidth-wasting' activities, it seems almost comical to me when someone says this. There is nothing more wasteful than 95% of what Usenet is used for. It's a joke to say that a particular person is 'wasting' it. To say that they are off-topic makes more sense. I guess this is just a gripe rather than what you are looking for. Wasting bandwidth again. :)"

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Conclusion

For the people of the world, the Net provides a powerful means for 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 deserves to be appreciated and protected. Any medium or tool that helps people to hold or gain power is something that is special and has to be protected.

The Net has made a valuable impact on human society. As my research has demonstrated, people's lives have been substantially improved via their connection to the Net. This sets the basis for providing access to all in society. Using similar reasoning, J. C. R. Licklider and Robert Taylor believed that access to the then growing information network should be made ubiquitous. They felt that the Net's value would depend on high connectivity. In their article, "The Computer as a Communication Device", they argued that the impact upon society depends on how available the network is to the society as a whole.[8]

Society will improve if Net access is made available to people as a whole. Only if access is universal will the Net itself 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 writes: "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.

Notes for Chapter 1

1. See the Internet Society NEWS, vol. 2 no. 1, Spring 1993, inside back cover for map.

2. J. C. R. Licklider and Robert W. Taylor, "The Computer as a Communication Device," reprinted in "In Memoriam: J. C. R. Licklider 1915-1990," Digital Research Center, August 7, 1990; originally published in Science and Technology, April, 1968.

3. Ibid., p. 32.

4. Proceedings of IEEE, vol. 66 no. 11, November, 1978.

5. J. C. R. Licklider and Robert W. Taylor, p.32.

6. Stefferud, Einar et. al., "Quotes from Some of the Players," ConneXions – The Interoperability Report, vol. 3 no. 10, Foster City, California. October, 1989, p. 21.

7. See article by Larry Press posted on the comp.risks newsgroup, September 6, 1991.

8. J. C. R. Licklider and Robert W. Taylor, p. 40.

Much thanks is owed to the many who contributed Usenet posts and e- mail responses to requests for examples of how the Net has changed people's lives. Only a few of the many replies received could be quoted but all contributed to this work.

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