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Introduction

The year 2022 marks the 25th Anniversary of the May 1, 1997 publication of the print edition of *Netizens: On the History and Impact of Usenet and the Internet* by Michael Hauben and Ronda Hauben. This issue is part of the celebration of that Anniversary. The articles begin with an interview with Michael Hauben in 1991. The interview situates him as a product of the computer hobbyist movement that helped develop and spread the personal computer in the 1980s. Once he had a modem in 1985, Michael participated in many local BBSs (Bulletin Board Systems). He was part of this early grassroots online world. He says in the interview, "modeming was a connection to the outside world to other people … with the possibility of intellectual discussions." In the late 1980s. Michael experienced the BBSs as the "ultimate vehicle of Free Speech, uncensored speech." But Michael also experienced the problems caused by commercialization.

The second article is a review of the book by Boldur Barbat. The reviewer first sees the book as introducing the word netizen as a reflection of a non-geographically based social membership. He then takes us through the book section by section pointing out that the book recognizes the possibility of more democracy. Barbat writes that reading the book, you will find "a very rich authentication, a host of peoples with a lot of ideas, comments, proposals and – sometimes – displeasure, rising their voices; you will discover rather the atmosphere of a 'multimodal chat' than that of a conference with invited papers … the book is net-centered because it is human-centered, or, pure and simple, human."

Next follows two articles written in 2003, "Netizens Then and Now" and "Netizenship Today: An Interview" which look at netizen developments in the more than five years since the print edition of the book appeared. Criticism of privatization was noted as was netizen debates and activities for more democracy in South Korea and the use of the internet in China by netizens for "political communication." Examples were cited of netizen activity in India and Italy. Also the question was raised what was the vision of Michael's work and did it change with time and what about the significant number of hooligans and sociopaths, who have appeared online? Ronda answers these questions by pointing to how problems were handled in the early development of the net and the role of the government in issuing an acceptable use policy. She sees that netizens can use the Internet to function as a laboratory of democracy to work out problems like these.

The 10th Anniversary of the print edition was celebrated in Manhattan on July 14, 2007. The next two articles document that celebration. Claire George writing in the *Korean Herald* saw that the concept of netizen "has become an inspiration for people who believe that the internet is a force for good." That good was seen in the example of OhmyNews citizen journalism and of the role played by 'netizen scientists' in exposing the fraud of a South Korean stem cell researcher. In his speech at the celebration, Jay Hauben said, "Ronda and Michael gathered in the book solid

historical evidence and contemporary practice for their thesis that something big was happening which would take a mighty fight to defend but which could profoundly change the media, politics, social life and even economics." He concluded, "Whenever I read some chapter in *Netizens*, I always have the same sensation. I want to participate more on the net. I still want to be a netizen."

On September 14, 2009, the Internet Society of China sponsored the first in the world Netizen Celebration Day. The next article is the speech Ronda gave at that event. She shared her understanding that, "the Netizen was not all users, but users with a public purpose … . The Net is international, so to be a netizen is to be not only a citizen of one country but also a citizen of the Net." She congratulated the netizens being honored and all netizens, adding her wish, "May the tradition of the netizen, along with the development of the Internet, grow and flourish."

A luncheon was held on May 1, 2012 to celebrate the 15th Anniversary of the print edition. Sixteen greetings of this Anniversary were read. They came from the U.S., Japan, China, France, Germany, Romania, South Korea, and Cameroon. The final greeting was anonymous, "Netizens around the world stand with you now." Among the speeches given was one by Xu Liang, "My Thinking on Netizens." He told of his early disappointment with the internet but later realization that the internet will "change the structure and management of human society." About the book, he said it was visionary, "not just because it foresaw the drastic social changes brought by the internet in early 1990s before I touched the internet, but what [is] more important is that the book offers us a blueprint or a way for our future society based on the internet, that is the netizen."

At that 15th Anniversary luncheon, Ronda spoke about "Netizens and Communication: A New Paradigm." She said her speech was to honor the occasion by looking back and looking forward toward trying to assess the significance of the book and of Michael's discovery of the emergence of the netizen. She briefly looked at what has happened in the interim of these 15 years toward trying to understand what new advance this development makes possible. Ronda called attention to the work among others of Mark Poster who saw in a globalized world the netizen would replace the citizen "as a critical concept in the politics of democratization."

The issue closes with "The Internet: A New Communication Paradigm." This article features a discussion carried out on Usenet in 1998. It is offered as an example of the kind of online discussion that the wide ranging reach of the Internet as a network of networks makes possible. The discussion clarified a fundamental question in the battle over the U.S. government decision to privatize the central functions of the Internet. The question was whether or not a society can afford to have something as important and central as the internet's development working in commercial conditions.

[Editor's Note: This interview was conducted on August 11, 1991. It has been edited. Ronda Hauben, William Rohler and Michael Hauben were founding editors of the *Amateur Computerist* in 1987-1988. Below are Parts 1 and 2 which appeared in the *Amateur Computerist* Vol. 4 No. 2-3, Spring 1992. and Vol. 4 No. 4, Summer 1992 at: http://www.ais.org/~jrh/acn/ACN4-2-3.pdf and at: http://www.ais.org/~jrh/acn/ACN4-4.pdf]

Interview with Staff Member Michael Hauben on the Occasion of the Tenth Anniversary of the Personal Computer

Part 1

Ronda: Tomorrow is the 10th anniversary of the introduction of the IBM personal computer on August 12, 1981. Also, one of our staff members, Michael Hauben, is leaving Michigan to go to college in N.Y. Therefore, it seemed an appropriate time to look back on the past 10 years and to review how the introduction of the personal computer has affected our lives. Michael is now 18. In 1981 he was 8 years old and already involved with computers. Michael is not only one of the beneficiaries of the computer revolution. The computer revolution was carried out, not so much by companies like IBM, but more importantly, by computer hobbyists like Michael Hauben. Thus in honor of the computer hobbyists, who gave birth to and developed the personal computer, we would like to review some of your experiences, Michael, with the computer.

William: How did you get started with computers?

Michael: The first place I really saw computers

was at an exhibit in Toronto over 10 years ago. There was a robot that was like the 4-axes machine that auto workers use. They also had a computer exhibit. I don't remember what kind of computer was on display but they were just a bunch of computers running different kinds of programs set up there at the Canadian National Exhibit. That really peaked my interest somehow.

When I was 8 (in 1981), I took a computer class at Schoolcraft Community College, in what was called the Kids College. It was part of what they called the TAG (Talented and Gifted) Program. The teacher's name was Mrs. Brown. We learned on the Apple II+ computers. The first day of class, Mrs. Brown lifted the top of the APPLE and said, "There, that's all there is to it, There's nothing to be afraid of." That was a very good introduction to the computer because it showed there was nothing to be afraid of. That we could completely control it. I learned BASIC there. I took several other classes in that program. I think I took three. I didn't take all the BASIC language classes offered. But I took a test that they had for their normal BASIC college level classes and I wound up getting three college credits for the BASIC language class. And I didn't do so good because I ended up only getting a B on the test. But the experience was interesting and from then on whenever there was a computer available I tried to use it.

After the trip to Toronto, I always wanted to buy a computer. There was the Texas Instruments 99/4a (TI 99/4a) and I don't remember how much it cost, but it was expensive. There was the Timex Sinclair 1000 (TS 1000) and that was much cheaper. My family and I had seen Sinclair computers in England when we visited. These computers could be hooked up to a normal TV set. I saved up my money and bought a TS-1000. Using it I more thoroughly learned BASIC. My father and I programmed a lot in BASIC with only 2K memory. We never seemed to run out of memory. We just played around and tried to do lots of different things, tried writing little games, graphics and we dabbled a little in machine language, not a lot however. Whenever I had the chance, whether it was summer camp or in a computer store, I'd try to do something with the computer. I learned BASIC, I learned LOGO on the TI-99/4a in camp, and I played around with APPLES and with Commodore PETS. In my elementary school, there was a terminal hooked in with the mainframe of the Dearborn Schools. At that time there were many programs on the mainframe. They had BASIC. They had games like the OREGON TRAIL, etc. I subscribed to two or three magazines for the TS-1000. I bought books, did all the TRY THIS type of small programs. Those were always fun because there would always be problems with the programs. There would always be 'bugs.' The books and sample programs were exciting somehow. I haven't found many books similar for programming on the IBM PCs today, books that I have found exciting for a hobbyist. And this is sad.

Soon after I bought the TS-1000, it couldn't have been more than a couple of years, I was trying to choose between the TS-2068 and the Commodore 64. I think the Commodore was more expensive. The TS-2068 had better color, and a more developed version of BASIC. The Commodore 64 was better in that it had a disk drive and the TS-1000 only had a tape drive you could use. The Commodore also had a real keyboard, while the Timex utilized raised chicklet keys. I bought the TS-2068. Then I had my first real lesson in the computer world. Three months after I bought the TS-2068, Timex stopped selling and supporting it. Timex made a deal with Commodore. There was an agreement to sell the Sinclair in England and Europe and Commodore in the United States. That was a shock because I thought I made a better choice, but it turned out the better deal is not always the best choice.

And my father and I did programming on that, but not really as much as we did on the TS-1000. It was a lot less, even though there was the added attraction of the color and the sound and the joystick port. And so I still did things and I tried to pick up on things whenever I could.

Christmas of 1984, we bought a Sanyo MBC-550-2 which was a MS-DOS compatible, but not an IBM compatible machine. The operating system was IBM compatible, but the graphics were different, the sound was different, and the BASIC was different. The Sanyo was a better machine for graphics, I think 640 x 400 with 4 colors if not 16. And WordStar worked. That's why my family got it – as a wordprocessor. I learned MS-DOS. I got more into the PC world. We subscribed to a Sanyo magazine for a while. We went to the Sanyo Users' Group for a while. We occasionally went to SEMCO (Southeast Michigan Computer Organization), but somehow that was already oriented toward business and they weren't very interested in helping us. Then in 1985, through INACOMP, my mother won a Compaq Portable. It was one of the earliest to come out that was fully IBM compatible. It

was a luggable portable, and it weighed about 20 pounds, if not more. And that's how I really got into IBM. We had a choice between a modem and a hard drive. We got a modem. It was a breakthrough. The hard drive seemed important but the modem was more important. We wound up getting a hard drive later on. With the modem, it lets you connect to the outside world. With your own little system you'd be like a hermit, but in connecting with the rest of the world, it's other people's opinions, different discussions about computers, about current events, debates about what's going on in the world and just general BS also. And you came into contact with people, you came into contact with different files to use with your computer, with what was going on with the computer scene and so somehow it was like a replacement for a user group. And depending upon the time, there was either a lot going on or a little going on.

Ronda: What do you mean?

Michael: Well right now not many boards I know have much debate on them. There are two that I am on. Both of them have debates on-going. I'm sure there are others, but I just haven't had time to look. But for a while I was on many of the boards and at one point many of the boards were silly contests to see who could post the most numerous messages.

Ronda: Do you have a sense what you were looking for on the BBS's? You used to spend a lot of time on them.

Michael: Well at first I wasn't on local BBS's. Originally, I was on CompuServe.

William: Free time?

Michael: Well, the first two hours were free. I almost became a Beta Tester for InfoCom through CompuServe. I sent in the application forms. I then received a congratulations letter, but InfoCom never sent me any games to test. The only response was a Christmas card. That was a soured CompuServe memory. I found some local BBS numbers listed on CompuServe and from my father and some friends of his from work. For a while I was mostly on Commodore BBS's and not many IBM boards. But then I started calling the IBM boards. It was new for me when I started. Modeming was a connection to the outside world to other people with similar interests. It was interesting – the debates about current events. Somehow there was the possibility for intellectual discussion which I couldn't find elsewhere besides my parents and a few friends like Floyd Hoke-Miller. But among my friends at school or neighbors, there wasn't much of a possibility.

When we lived in East Dearborn, our next door neighbor, Tom, had an Atari and a Commodore 64. He shared an interest in computers with me. He was my friend, even though there was a large age gap, because we were both interested in computers. He let me come over and try some things on his computer and I'd go with him to computer stores.

William: Another thing about using modems, you can't tell the age of the person. It treats you more like an equal.

Michael: There's an anonymity. You don't know anything about the other users. So you are more willing to accept them. There are still first impressions. If you act like a real idiot, people won't like you. But the full element of first impressions is left out. And people tend to rank you or be friends with you on how you act online, what you speak about. It does help. You tend to get to know the people and there isn't as much blocking. And my first handle was Wizkid. I changed my handle two or three years ago to Sentinel. And there was one person who signed on and said it was great knowing you. He was one of the people who knew me as Wizkid. There was a "Remembering the OLD Days" theme area on one of the BBS's and someone said, "remember that Wizkid." And I said, "that was me." And he said he didn't know that. When people change their handles, it's public but somehow people don't always realize it. When I changed my handle, I decreased my activity. When I decreased my activity it was because there were just silly messages that didn't mean anything, or they just seemed juvenile, and I don't know if that's because the people calling were younger or they were more juvenile. The way people accept you is based on your maturity online and your maturity showed through more than your age. And there was one debate where someone said you are just a kid. And I used to have the handle Wizkid. But it didn't matter what your age was, it was more how mature you were. He was trying to say "Well you're just a kid, you can't know anything." But he was wrong. So there is less age discrimination on the boards.

Ronda: Why did you decrease the time you spent on the boards?

Michael: I had to spend more time with school, with friends, with my job. Whenever I used to come home from school, I used to spend two or three hours, but then my mom said, "We need the phone." So I didn't spend my free time before homework on the

modem. And then with work, I wasn't even home on certain days to use the modem.

Ronda: But it seemed you were also a little disappointed. There were user parties, but it seemed the computer world didn't extend outside of the modem.

Michael: It did to a certain extent, but it didn't include everyone. Like some people were friends before. There were modem parties where people from the boards got together, whether it was a software swap or a party.

Ronda: There weren't many, were there?

Michael: Well, what happened was the main person who had the parties was from a TAG board in Taylor. He had his computer stolen after the second or third party. So he stopped holding them. Then there were multi-user boards. There was MNET which was a multi-user. The general age of the users on MNet was older than on the other single-user BBS's. And it was more serious. It was more a UNIX board. It was a different bunch. It was not the home but the people in school, in Ann Arbor. It seemed like the multi-user boards made it easier to hold parties because users could chat live one-on-one. And when AMUSERS (a multi-user board) closed down, I didn't get on other multi-users that were like AMUSERS. Some people already were friends but you didn't end up doing much so it was a little disappointing. Cause it didn't seem like there was any – it didn't get anywhere – it was just online so that was a little disconcerting. It was disappointing because that was where I had found more intellectual people but it didn't go anywhere. And things like CompuServe cost a lot of money. There's CompuServe, there's Delphi, there's Geni, there's PC Link, there's Q-link, there's a couple of services but they all cost money, so that's hard to deal with. And then there are bigger boards that exist. But they all cost money. There's the WELL. That's in California. You also pay per hour like CompuServe. So it's harder to be on. It's like MNet. It's the same software as MNet. And maybe I did find it disappointing. It used to be there would be lots of new BBS's popping up. But they were interesting. And now there still are lots of new BBS's popping up. But they're silly. So it's gone downhill a little bit. And also BBS's are similar to the CB or the Ham radio in that people voice their opinions, or have discussions or chat or there used to be DDial's – all they were were multi-user, people chatting, but they were 300 baud so they were super slow. Some of those you had to acquire membership. But they were linked up across the country. There were things called LINKS that would connect you to other DDials around the country. So that way you could talk to people.

Somehow the thing about BBS's was it was the ultimate vehicle of Free Speech, uncensored speech. For the most part things were not censored. What you posted was left alone. It was like everyone's Letter to the Editor was allowed to be printed. There would be letters debating other previous letters. Different Sys-Ops had different rules and some would delete messages that contained profanity or were only personal attacks or something. BBS's are the greatest form of free speech. The problem was you needed a modem and a computer to get into it. So it's not as free as it might be, but compared to the newspapers, the newspapers print what they choose, whereas on BBS's everything is printed, everything is published. It's more of a dynamic medium than a static medium because depending on the board there's different forms of dealing with messages. For example, some boards after the first 50 messages go by, the first message is deleted, so it's a dynamic thing. Unless somebody prints out a copy or saves it to disk, it doesn't stay static. Like on MNet, things aren't deleted. They are deleted when the message sys-op of the area decides no one is interested anymore. That's more of a choice method of deletion, than where it deletes messages or the new one pops in, the old one pops out and it's deleted. And even depending on what happens, it's still an important medium.

There was, for example, just a debate about the war against IRAQ on BBS's. Usually you didn't see where there was dissent. Whereas on the computer, if people wanted to, they could debate it and there was debate about it. A free medium. It's open access. Not closed. It's also a field where the hobbyist still exists. There are people who develop ways of using the modem, whether it's different compression techniques where you can send more and larger files quicker, or whether it's different file protocols that send them faster over phone lines. Those are constantly developing. That is a hobbyist frontier now. Maybe there are less people than when the computer started out. But it still exists. It's a frontier that's not closed up yet. It's not definite yet. New things are continuing to come out. For example, higher speed chips for the serial ports in the computer so that the computer can talk to the modem at a higher speed and everything.

(Continued below)

[Editor's Note: This concludes the interview begun in Vol. 4 No. 2-3. It is a slightly revised version of Part 2. What started primarily as an interview, which is printed above as Part 1, developed into more of a free form discussion about the present and future of computers.]

Interview with Staff Member Michael Hauben on the Occasion of the Tenth Anniversary of the Personal Computer

Part 2

Ronda: Do you think there are any lessons from what is going on?

Michael: Well, the Timex/ Sinclair Commodore agreement was proof that the best choice is not always for the best. The best product does not always end up being marketed or sold. That seems true of many things in this capitalist world. Sony's Beta video system was technologically superior to the current VHS standard. I don't know if there is a lesson to draw or not. A similar problem is occurring with computer magazines. In particular, I am thinking of: *Popular Computing, Family Computing*, *PC Computing, Creative Computing*, and *Compute*. Most of the magazines have changed their priorities from an emphasis on hobbyist or home users to business. *Popular Computing* disappeared shortly after changing its name to *Business Computing*. The same thing happened with *Family Computing* after it changed its name and emphasis to *Home and Office Computing*. Unfortunately *PC Computing* is following the same path. *PC Computing* started out as an alternative to other magazines such as *PC Magazine* and *PC* for the home or hobbyist crowd in the PC community. It had reviews of games and broader articles, while being a smidgen less technical and completely unconnected to a business point of view. The subtitle is now "The magazine for Business Computing Experts." Readers have recognized the change and written letters to the editor to comment and complain. As for other examples, *Creative Computing* vanished and *Compute* compressed down to one magazine from what was four. However, Commodore 64s still sell, and that is a viable community. I guess PCs are coming home from the office, but that doesn't mean they are only used for business at home. A whole community seems to be left unserved by this trend in computer magazines. True, computer gaming magazines exist, but home computers are used for much more than just playing games. One problem is that PCs are not particularly getting cheaper. Any decrease in price has more or less been incidental to the increase in power. The 386s cost today what the 286 cost yesterday. But there are still no really affordable computers in the $100 to $200 range. This is sad, because the computer is not as affordable as it should be. Thus, personal computers are still not a normal part of most households which was the real goal of the personal computer revolution. While most homes have been affected by the arrival of microprocessors in many home appliances, the personal computer itself is not yet a home appliance. The general recent trend of computer development is aimed at business, as opposed to the people. Not for the majority, but for the minority. It's like what IBM did for the mainframe and other mainframe manufacturers in the '50s, '60s and '70s. The mainframe then was only affordable by the biggest of the big companies or the large educational institution. The difference today is that small business can afford computers, but still only businesses. Computers are marketed as for businesses and entrepreneurs, and not for the average person at home, or for the majority of the people. The radical push of the personal computer movement in the mid to late '70s was to make the computer available to everyone, and not just accessible to Fortune 500 companies. True, these days computers are much more affordable than 20 years ago, but the general movement in the personal computer world seems opposed to its roots.

Ronda: How so?

Michael: IBM exemplifies this movement with the release of their PS/2 line. These computers have a proprietary bus. IBM changed the name away from personal computer to personal system 2 which is more like the mainframe names. It made it less friendly in that sense.

Ronda: Are you optimistic? Pessimistic? What do you think will be the future with computers? With you and computers?

Michael: Well by going away to school I'll gain more access to what's called the Internet, the big net that exists, the connection of computers across this country and across the world. You gain more access when you go into an educational community. I'm

optimistic because of that. I'll have to manage that as part of my time. Businesses and education are involved in that. It's harder if you live at home to have access to it. [Editor's Note: Home access is more available now, than it was a year ago when this interview was done.] Somehow you need something powerful enough to hook into. It's not quite fully open. If you live near an educational community you can gain access to it. I have and you can. Our connection is MichNet. So that will be broadening. That will be a connection with the rest of the world computerwise, but it's not quite just the computer. So that's encouraging.

Somehow they are working on building things smaller and more minuscule but not quite pricewise. The computers aren't quite like the microwave [oven] and the VCR. Home appliances started out expensive but there are now so many different companies making them that they have come down in price so they are affordable. As I said before computer performance increased but it doesn't come down in price. Actually, its going to be a stretch to buy a computer for myself, but I wouldn't have been able to buy one last year. What used to be $2000 is now $1000 or coming closer to $1000.

Ronda: Do you think there has been some kind of revolution with the computers? Do you think there has been a computer revolution?

Michael: Well, there is the personal computer. If it was up to the big companies, there wouldn't have been one. As I said the corporate trend is reactionary.

Ronda: Do you think there's been a computer revolution, William?

William: What do you mean by a computer revolution?

Ronda: That something fundamental has changed because of the computer.

William: Fundamental?

Ronda: Or something substantial that you see at work?

William: We're using computers more. We've got IBM 486 computers on the shop floor.

Michael: But what do you use them for?

William: For altering and transferring programs to our CNC machining center. We got rid of the Westinghouse computer in the computer room and you can download more files into the 486 computer. It has all our files already. It won't hold us up when we are running the machine.

Ronda: But the computer isn't being used to run a machine?

William: No it's not to run a machine directly. You have other computers for that.

Michael: So the computers are like terminals?

William: It's like a database. But you can edit and change the data if you need to.

Ronda: Are most people comfortable with them. Or is it that if people don't have home computers its harder to use them?

William: Well they have menus instead of working with DOS. It just takes a F[unction] key and that is it. We finally got a manual for it. The editor is difficult to work with. They're still working on a new editor … .

Ronda: Remember they were talking about the workerless factory in the last seven or eight years. My sense is that hasn't come to pass.

William: Well, there are a lot less people working in my shop. They're standardizing everything so there's less skill involved in putting dies together.

Ronda: But the computer hasn't cut the people out or caused problems?

William: No.

Ronda: So do you think there's been some kind of computer revolution in the last 10 or 15 years? That something substantial has happened to change.

William: Society?

Michael: Well a lot of things have computer chips in them now. All your household appliances have them from the TV set on.

William: Cars have them.

Michael: Cars have them now so society has been changed by the introduction of them. The mainframe computer didn't use processing chips. It took buildings with floors to house those computers. But now, the personal computer is the achievement of the trend of miniaturization that came in the 1950s.

William: More like evolution, right. You got chips in TV's now. You got picture-in-picture, not revolution, not a substantial change.

Michael: Well, there was the miniaturization after WWII but it didn't hit computers then. Computers were still the great big mainframes that used the vacuum tubes. Then came the transistor, the microprocessor, and the integrated circuit. But they weren't really utilized with the mainframes. Or if they were, instead of a whole floor, it was a room. But it wasn't down to a single chip which now exists and which is constantly getting smaller. They think they're reaching the bounds actually. Now people are speculating that the silicon chip has reached its physical speed and size

limits and a new material needs to be used, like chemical or biological materials instead of electronic. But I feel if it had not been for the personal computer revolution, there wouldn't be such use of processing chips and use of computing technology involved in so many things in our daily lives.

Ronda: But I feel the substantial question is are they being used to produce more with less labor? I think they are being used more as consumer goods. But it doesn't sound like they've made a change, a fundamental change in the way things are produced. For example, at the beginning of the Industrial Revolution people worked in their homes. Then people were brought into the factories to work together. There was an increasing division of labor, and then machines were introduced and people operated the machines. Then machines were used to operate other machines.

It doesn't seem as if the computer led to a similar kind of change in industrial production. It doesn't seem that computers are widely used to produce things. It seems the computer has been used for paperwork but not for producing goods.

William: It takes longer to get a computer to do something than it does a machine. They are probably working on that stuff too.

Michael: But actually there's something called CAD/CAM or Computer Aided Design and Manufacturing. But then there's something called CIM (Computer-Integrated Manufacturing) which I did a study on and it seemed like it was trying to steal the computer and give it to management which was a top down design and not a bottom up design. When I read about it two years ago it seemed a flop. It was trying to steal the computers from the people rather than using the computers to help the manufacturing process. But I don't know what your experience has been with CIM.

Ronda: But there was also a big push to lower wages and have people work a lot of overtime. And I thought that got in the way of using the computer to make things more efficient.

Ronda: Any final words?

Michael: Even though I have decided to go to Columbia University in NYC instead of the University of Michigan, I am optimistic. Columbia is less computer-oriented than the University of Michigan, but Columbia seems better connected to the educational and academic computer networks. But Michigan for me would have been a better computer school. Columbia has more of its computer roots in the past while Michigan has more in the future. There are a couple of centers opening up and there is, at Columbia, the State Center for Computing Research. But it's not as obvious as Michigan how involved it is with computers. I am sort of pessimistic, because with the age of the computer industry, it seems to have receded. But it's probably just a cycle.

Ronda: No, it's a fight. You have to figure out how to take it up. The personal computer caught people by surprise when it spread so quickly and so substantially. People now have to evaluate what has happened. I feel the lesson is you can't trust the business world of large corporations to develop computers and computer technology. Big corporations can't be coddled by government, the press, etc. and encouraged to freeze the development of technology or to go backwards to hand labor as they have done in many instances. The machine is a machine for society. It was a mistake to have trusted the corporate world to develop it. Instead the corporate world must be regulated and limited in its efforts to impede the development of technology. That's what anti-trust legislation originally accomplished. The personal computer was created while there was a U.S. government anti-trust suit on against IBM which kept it from interfering with the development of the personal computer. Once again there is a need for something independent of the corporate world, and there is a need for regulations and limitations on the corporate world so that their narrow self interest is prevented from interfering with social and technological development.

Michael: You need a new Henry Ford for the Computer world.

Ronda: No, you need another "Computers for the People" movement.

Michael: No, again.

William: My niece is going to go to Michigan State and she's not going to get a computer. She's going to get a word processor. You have a screen, keyboard, and a printer all in one unit. That suits her.

Michael: But its not compatible with anything other than another wordprocessor of the same type.

William: There are some that have a floppy disk.

Ronda: But it's sad the computers aren't cheap with a cheaper printer too.

William: Well it's a letter-quality printer, she's not going to be doing graphics.

Ronda: I thought John Kemeny once predicted that there would be computers used in the schools for wondrous things. But now he is disappointed that that has not happened.

William: One of the problems is software. There aren't enough software developers to write programs people need. To get them involved.

Michael: Its not just software developers, its ideas. People are not creating new ideas but merely copying old ideas.

Ronda: But I thought that there was the discouragement, when people were told "People don't need to learn to program." Michael learned to program and it was a good thing he learned to program. Instead of saying it's a good thing to learn a little programming it was said you don't need programming. So it seems that there has been a lot of pressure to keep people away from utilizing computers and discouraging them instead.

Michael: I left out that I know a little MS-DOS batch language, a little C, and a little Forth. I did very little in Assembler.

William: Are you going to take computer classes in collage.

Michael: I don't know if I'll have time.

Ronda: To sum up, it seems it is as if this period is like the period in France before the French Revolution. Then there was the basis to have capitalism, but you had the feudal lords and the King holding society back. You had a Monarchy. There was a need for the French Revolution to get rid of the Monarchy and the Aristocracy and the feudal social forms and laws that they kept in place. They prevented the reforms that were needed to develop large scale production in France. The problem we have today seems similar. Big companies are discouraging investment in new technology like computers because such investment will lower their rate of profit. There is a need to get rid of this fetter so that technology can be encouraged and developed.

[Editor's Note: The following review of the *Netizens* book appeared in *Studies in Informatics and Control Journal* (SIC), December 1998, Volume 7 Number 4, (Bucharest). It is online at: http://www.columbia.edu/~hauben/Era_of_the_Netizen/resources/Review_of_Netizens-BBarbat.txt.]

Book Review

Netizens: On the History and Impact Of Usenet and the Internet

by Boldur Barbat

Michael Hauben and Ronda Hauben
IEEE Computer Society Press, Los Alamitos, CA
1997, XVI p. + 346 p.
ISBN 0-8186-7706-6

The book aims at presenting the development and significance of the participatory global computer network evolving into "an ambitious look at the social aspects of computer networking. It examines the present and the turbulent future, and especially it explores the technical and social roots of the Net." The readership aimed at is comprised not only of those who are already Netizens but – maybe notably – of those who strive towards getting this status, within the perspective of passing from the latter condition to the former. So, before moving forward, let us see where such a gratifying title comes from – according to Michael Hauben: "My research demonstrated that there were people active as members of the network, which the words net citizen do not precisely represent. The word citizen suggests a geographic or national definition of social membership. The word Netizen reflects the non-geographically based social membership. So I contracted net.citizen to Netizen." Anyhow, the book makes it evident that the word – as well as its denotation and ramifications – are here to stay.

The volume is divided into four Parts; each part comprises between three and six Chapters ordinarily consisting of articles written over a four-year period (1993-1996) and set up to be read individually.

The first Part, "The Present: What Has Been Created and How," has four chapters providing an introduction to the net world: the effect it has on peoples lives (now, after the moment when the critical mass of people and interests has been reached), USENET (its evolution and goal as "poor mans ARPANet"), the social forces behind its development, and the description of the USENET (including the conceivable antithetical features of structure anarchy

and the system of rules known as "Netiquette"), emphasizing the advantages of this new world as well as the possibility of a "more democratic government."

The second Part, "The Past: Where Has It All Come From," is the largest one, being composed of six chapters, and starts with the "vision of interactive computing and the future" originated by Licklider and proceeds on describing the foundations of the cybernetic revolution, time sharing, man-computer symbiosis and their implications. Chapter 7 looks "behind the Net," introducing "the untold story of the ARPANet and computer science" highlighting the new way of viewing the computer: a communication device rather than (only) an arithmetic one, whereas the next Chapter is a comprehensive narrative of the birth and development of the ARPANet. The last two Chapters bring into focus the early history and impact of Unix, and the roots of the "co-operative online culture," respectively. In one of its Appendices are two lists of Newsgroups appearing in USENET in 1982.

The third Part, "And the Future?", comprises five Chapters. In Chapter 11, the National Telecommunications Information Administration virtual conference on the future of the Net (held in November 1994) is described as a very significant event, attempting to create a prototype for a democratic decision-making process. The next Chapter, with the inciting title "Imminent Death of the Net Predicted!" – a phrase often used in the past, by USENET pioneers, when problems seemed insurmountable – explains the new problems ensued by the envisaged changes in the nature, ownership, and oversight of the Net, defending the principles that place its development into the hands of the public, educational, and scientific sectors of society (i.e., considering the privatization harmful). Chapter 13 investigates the effect of the Net on the professional news media, under the metaphor of "Will this kill that?"; its conclusion is rather optimistic: the user masses becoming "netizen reporters" will force the acknowledged news media – to avoid being increasingly marginalized – to evolve a new role, challenging the premise that authoritative professional reporters (almost always biased, consciously or not) are the only possible ones. Chapter 14 scrutinizes the effect of the Net upon the future of politics, forecasting the "ascendancy of the Commons" by reason of the new technologies presenting "the chance to overcome the obstacles preventing the implementation of direct democracy." The last Chapter of this part, departing from the changes on a world scale, explores the New York City's online community, showing a snapshot of "nyc.general," and concluding that, in spite of being problems online, the advantages are "more important and outweigh the disadvantages."

The fourth Part, "Contributions Toward Developing a Theoretical Framework," consists of three Chapters. Two of them address characteristic areas: "The Expanding Commonwealth of Learning" and "'Arte': An Economic Perspective," respectively. As regards the first issue, "making a contribution is an integral part of Netizen behavior" and "both the printing revolution and the Net revolution have been a catalyst for increased intellectual activity." With respect to the second question, after accentuating the role of "Arte" in the production of social wealth, the authors defend Hume's observation that "arte" leads to intellectual ferment, and, in turn, this ferment "is the needed support for the development of technology." The last Chapter merges the consequences of the former ones into a whole, synthesizing them in its title – perhaps the banderol of the entire book: "The Computer as a Democratizer," one main idea being that the "step toward universally available and affordable access" and "uncensored accessible press" demonstrate that "it is now possible to meet more of Mills requirements for democracy."

At the end, before the substantial and numerous references, the Glossary of Acronyms is, particularly for readers outside the American cultural milieu, an invaluable asset.

Maybe, this condensed passing through the content can give you an idea about this book, but it could be inconclusive, because the mesmerizing force is originated by – or, better, in – the multitude of quotations from known, and mostly unknown, "co-authors," the conventional ones remaining in the background, as unpretentious editors, devoting themselves to the chore of task-building. Consequently, "Netizens" becomes rather an aggregate of articles, than an orchestrated ensemble with its unbroken composition and, in turn, the articles become a kind of syncretic and chaotical, but very enthusiastic and, first of all, very fertile opinion pool. Though, the whole might be seen in the optimistic view of the Net, as well as the cyberspace it embodies, as a "meritocratic" environment; the book suggests us a micro-snapshot of such an ambience. The feeling – intended or not – is that the book has been written by Netizens for themselves, as an entreaty, a summons to all readers – whatever and where ever they are – to join them in the extraordinary

world they live in. Thus, the book employs, at its much smaller scale, the "large-scale customization" made workable by the Internet it fights for. By the way, have you seen many books with Foreword, Preface and Introduction? Yes, the book is full of redundancy and heterogeneity – just like the Net, just like life itself (fortunately, some of the redundancies are quite pleasant, covering most crucial historical moments of the marvelous phenomenon they depict). Reading it, you will find a very rich authentication, a host of peoples with a lot of ideas, comments, proposals and – sometimes – displeasure, rising their voices; you will discover rather the atmosphere of a "multimodal chat" than that of a conference with invited papers. So, if you imagined that you could learn from this book about network programming, forget it. Yes, the Internet is in there, but as an actor – in all interpretations of this polysemantic word – not as a computerized tomography. Thus, paradoxically, the book is net-centered because it is human-centered, or, pure and simple, human.

If you read it again – it is in no way a chore – and all seems all right, nothing is amazing or frightening, then you are prepared for full Netizenship (of course, you need a computer, too!). Moreover, from the wording as well as from some rare photographs, you may scent the flavor of old battles (with legendary heroes like Wiener, Shannon, McCarthy, Licklider, Thompson, Ritchie …), fought for forwarding not only the Net, but the Computer Science itself. Such a flavor acts in the age of Netizens as a catalyst for the Information Technology. Thus, the book can be seen – and used – as a kind of second-degree catalyst: the written catalyst for the living one … .

[Editor's Note: This article appeared in the *Amateur Computerist* Vol. 11 No. 2 in May 2003. The whole Vol. 11 No. 2. issue has the title "Netizens: Then & Now." It can be seen at: http://www.ais.org/~jrh/acn/ACn11-2.pdf. The article below was to mark the 10th Anniversary of Michael Hauben's July 6, 1993 posts, "Common Sense: The Net and Netizens" in three parts which are online at: https://www.ais.org/~hauben/Michael_Hauben/Collected_Works/Posts/1993_Common_Sense_USENET_Posts/.]

Netizens Then and Now

by Ronda Hauben

Introduction

This year, 2003, marks the 10 year anniversary of the introduction online of Michael Hauben's article "The Net and the Netizen." In honor of this anniversary it seems appropriate to look at how this concept has inspired, described or promoted netizenship around the world in the intervening years.

Search engines turn up almost 100,000 instances of the use of Netizens. Individual searches combining different countries and "netizens" such as "Netizens India" or "Netizens Korea," turn up a large number of hits in each individual country. I want to consider but a few of the examples I found.

Examples

1) A paper written by Jane Long and Matthew Allen titled "Hacking the Undernet" (*The Australian Journal of Communication*, vol. 28 (3) 2001, pp. 37-54) describes the process of privatization of the Internet as one of invading it. They examine the concept of an online community. They recognize that the networking architecture, which sets a foundation for the global commons is often hidden from most researchers who focus only on the online conversation. Long and Allen object to this limiting and characterize it as a "narrowing" of the meaning and character of the concept of community. They write:

> The narrowing of meaning and association of the term 'community' was also influenced by a concurrent thread in Internet research concerning USENET newsgroups. As with initial forays into IRC research, earlier ground-breaking research (principally by Hauben & Hauben, 1997) into USENET had identified the totality of newsgroup users as a form of community, 'a world town meeting' or 'the Wonderful World of USENET News.' The Haubens

also, however, emphasized the technical architectures through which the overall USENET system was maintained.

Long and Allen point to other notions of community that narrow the concept to those on a single newsgroup, or those who use the Internet to support relationships among people which already exist. In this context they critique the notion of the Internet as a frontier with settlers. They write:

> Many problems have been identified with the individualist, libertarian, and colonizing ideologies inherent in the frontier myth (Barbrook & Cameron, 1995; see also Werry, 1999). An additional concern, not normally considered, is that describing cyberspace as a frontier 'presumes' the existence of the space into which community developers and settlers, such as Howard Rheingold, John Perry Barlow, Esther Dyson, George Gilder, and the multitude of anonymous others, were to move. However, these self-styled settlers were preceded by another community, or set of interlinked communities, comprising the engineers and scientists, hackers and coders, system administrators ('sysadmins') and operators who – effectively – created the virtual terrain later labeled 'the frontier'. Some who utilize the frontier mythology regard these creators as the 'natives' to be colonized or even driven off the frontier (Werry, 1999), but within the metaphor, that still leaves open (or, rather, hidden) the identity of those who created the cyberfrontier in the first place.

2) An article in a South Korean newspaper (*Digital Chosun Ilbo* – English Edition) on March 3, 2003 documented how the Internet was making it possible for people to act as netizens. The Korean president made a decision to support the U.S. war effort in Iraq. The newspaper article reports that this decision "has stirred up a flurry of disputes among the segments of society."

The article then describes the role of the Internet in this dispute:

> Much of the dispute is playing out on the Internet, where tempers flared after President Roh's televised address on Thursday. A netizen with the ID of 'small practice' wrote on the website Jinbonuri that 'President Roh violated the constitution by deciding to dispatch our troops to Iraq.' He created a petition, to which 150 people quickly added their names.

The article continued quoting from another website:

> The Cheong Wa Dae website was swarming with thousands of posts and e-mails criticizing the president's decision. One netizen said that the president had betrayed his people … . But other voices supported Roh. A netizen with the ID 'people' wrote that 'The war is abhorrent, but as an ally of the U.S., we must not forget that 30,000 American soldiers are in Korea to secure our nation.'

The article in a very small way documented online discussion among Internet users in South Korea to discuss whether a policy of their government was in the interests of the South Korean people.

The article only gave a few of the posts. The posts themselves, however, are an important process that shows that governments are not the same as the people of a country. Though the Internet now makes it possible for governments to hear the views of their citizens on important policy questions, most governments do not recognize the importance of these voices. In general, they don't try to hear from the people of the country before undertaking actions that they claim are in the best interests of their citizens.

The Internet and netizens are changing this terrain, however. It is now possible for governments to support the creation of online processes where they can hear from their citizens and from netizens around the world about the national and international response to their plans. That is a more dynamic process than depending on the voices of a few to determine the decisions that will affect the many.

3) Another article explored the importance of the concept of netizen for the people of China. The paper by Jack Linchuan Qiu, about the Internet and its role in China, describes democratic vision for the role of the Netizen in Chinese society. In his article, "Virtual Censorship in China: Keeping the Gate Between Cyberspaces" (*International Journal of Communication Law and Policy,* issue 4, Winter 1999/2000), Qiu writes:

> The Internet, as the means of online political communication (OPC), is not only a stimulant of cross-border interactions but also a tranquilizer of academic debates …. Some hold that advanced technology tends

> to democratization, while others contend it leads to demoralization … . Today's new medium is the Internet. It sets the academic agenda with its interactivity, global accessibility, infinite channel capacity and other pro-democracy properties. It engulfs the critics of technology, whose voice nearly disappears … . (p. 1)

Qiu recognizes that the Internet is a platform for many different activities. He defines netizens, however, as those who utilize the Internet for online political communication. He writes:

> Politics and ideological content is usually outnumbered by discussions about technology, economy, entertainment, sports and other topics. In this sense, only a small portion of China's 4 million Internet users can be called "netizens," defined as those who engage in OPC. (pp. 9-10)

Qiu observes that there are netizens from within and outside of China who interact. He writes:

> A special group of netizens is the external users, who enter China's virtual territory from the outside, playing a key role in linking China's cyberspace with the global computer network. Most of them surf domestic websites and exchange information with others as ordinary users. (p. 10)

Among these users he reports that "some directly oppose the rule of the Chinese authorities distributing e-mails with overt anti-ccp content."

The Chinese government websites, Qiu reports, are not influential. One reason he proposes is that they "lack interactivity." He writes:

> The websites are designed to facilitate one-way indoctrination instead of OPC interactions. Seldom do they reflect nonofficial opinions except when they are hacked. (p. 10)

Discussing the advantages of technical background for Chinese users who want to engage in online political communication, Qiu writes, "Technical detours bypassing regulatory obstacles are also possible in the case of the user who has more computer literacy." (p. 18) And he reports that most Chinese netizens use pseudonyms to protect themselves from penalties for expressing their views. (p. 16)

His article raises the question of whether the Chinese netizens will prevail in their challenge to virtual censorship in China. "It remains uncertain," Qiu writes, "whether virtual censorship in China will become more menacing or they will collapse someday leaving online political communication free at last among the Chinese netizens." (p. 20) The URL for the journal's website is http://www.ijclp.org/.

4) Looking for a definition of netizens, the online Miriam Webster dictionary defines a netizen as "an active participant in the online community of the Internet."

5) The Tech Target, "What Is" website, goes further offering two similar meanings for "netizen."

> 1. A citizen who uses the Internet as a way of participating in political society (for example, exchanging views, providing information, and voting).
> 2. An Internet user who is trying to contribute to the Internet's use and growth. As a powerful communications medium, the Internet seems to offer great possibilities for social change. It also creates a new culture and its own special issues, such as who shall have access to it. The implication is that the Internet's users, who use and know most about it, have a responsibility to ensure that is used constructively while also fostering free speech and open access. (http://whatis.techtarget.com/definition/0,,sid9_gci212636,00.html)

6) Chris Mueller, a graduate student, at the University of Berne, in a thesis on "Electronic Networks and Democracy" (draft October 2002) describes how the online process of users contributing to the net is necessary for the net to be a democratic commons. He concludes that this process needs the hard work of people online.

Those who do some of this hard work, are the online users that Michael called the netizens.

7) "Netizens Unite," proclaims the title of the editorial in the *Times of India* on Tuesday, March 4, 2003. The editorial appeared in the online edition and also in the print edition on page 14. The editors of this major newspaper in India write:

> America's threatened war against Iraq has divided the world. First between the few friendly governments that support its unilateral action and the many that don't. And second between officialdom on the one hand and the people on the other. This later division is particularly significant because it has pitted democratically elected govern-

ments that back Washington against the overwhelming anti-war sentiment of their own people. But none of this has made the slightest difference to president Bush and his team of hawks.

The editorial documents that there was a basis for a peaceful process to achieve the end that the earlier UN resolution had advocated (whether or not that was a legitimate end, was not a question raised however).

Then the editorial asks, "But what can all those around the world who oppose this mindless militarism do other than feel powerless?"

This is a question essential to Michael's vision for the concept of the netizen. What are the means for common people to have power over the issues that affect their lives, including issues like whether one's government makes war on another country?

The editorial then proposes a tentative way to look at this problem. The editors write:

> We believe that one easily accessible way for world citizens to protest against this war is literally a mouse click away. As inhabitants of an increasingly globalized and borderless world, they should use the ultimate instrument of supra-nationalism – the Internet – to register their opposition and say no to the war: Netizens of the world unite, you've nothing to lose but your chains of chauvinism. (To voice your views log on to http://no-war.indiatimes .com [no longer available]).

The significance of the editorial is that it proposed that people peacefully discuss their concerns and views. That such activity might indeed be a weapon in the fight.

The editorial and then the online discussion by the *Times of India* are not alone in seeing in the concept of Netizen as a way to be responsible "inhabitants of an increasingly globalized and borderless world" which the Internet has made possible.

8) It is not only researchers and writers online who have explored and contributed to the development of the concept of Netizen. There is also interest in the vision of the netizen in the online art community. For example, in December of 2002 there appeared on the Net an announcement of an art exhibit and competition in Rome, Italy. The exhibit was curated by Valentina Tanni, who writes (our translation):

> Netizens is a neologism. It is born from the union of two English words, net and citizens and is used commonly to define the navigators of the web. The expression, destined to a great future, was coined in the book by Michael and Ronda Hauben, authors of an important book about the social and psychological impact of the Net and of Net communication. [Actually it is Michael who is responsible for identifying and developing the concept of netizen.]

Tanni continues:

> It is not enough to be connected to the Internet to be a Netizen. In order to enter and to become part of this new, diffused society, it is necessary to pay attention to it, to understand it and to try to improve it, just as one must do to be part of communities offline. (Catalogue of the exhibit "Netizens: cittadini della rete," Sala 1, Rome, Italy, December 2002, p. 14.)

9) Another writer commenting on the concept of Netizen, shortly after the concept spread around the Internet, John Svedjedal, in his paper, writes:

> The Net provides new opportunities for discussions, meetings, and the exchange of ideas. As Michael Hauben … (has) recently remarked, the Internet provides an 'expansion of what it means to be a social animal' – the democratic, helpful human being Michael Hauben has labeled the Netizen … . (Chapter 3, "Busy Being Born or Busy Dying?" http://www.diva-portal.org /smash/get/diva2:105809/FULLTEXT01.pdf)

Conclusion

These are but a few of the ways that the concept of netizen is being understood and utilized online in the years since Michael first recognized that there was something besides the technology of the Net that was important. Among the Internet's users something new was developing, something new was being born. This new phenomena is what Michael recognized and he called those who were part of this new phenomena "netizens." Whether the word had ever been used previously, is not significant. What is significant is that there was a transformation occurring. Among the users online, something new had been discovered. This was that they were able to be part of a new society, and to play an important role in the birth and development of this new society. This isn't something idealistic or off in the future. And it isn't something detached from the

offline world and society. The netizen is at the intersection between the old and the new, between the offline society and the online community. The actions that people described in 1992-1993 when Michael posted his questions about the impact of the Net on people, gave him an understanding of this new development. This understanding was captured in a new concept, netizen, made up of the concepts of citizen and net. And this concept, the new concept of the netizen has gone on to set a foundation for a more active role for citizens and people online, for a way that the Internet and its users can influence the old world, the old institutions, so that the new world of a new millennium can come into being. We are not there yet. Neither is the concept of netizen a concept of "utopianism" as some have suggested. Rather there is a living practice, an experience, and a consciousness developing which is one of the promises for a better world in the future.

[Editor's Note: The following interview was conducted in 2003 more than five years after the print publication of the book *Netizens: On the History and Impact of Usenet and the Internet*. It is in the *Amateur Computerist* Vol. 11 No. 2 online at: http://www.ais.org/~jrh/acn/ACn11-2.pdf. The questions were by Daniela A Baszkiewicz-Scott who had been a journalist in Eastern Europe for many years. Ronda Hauben is a co-author of the book and a founding editor of this newsletter.]

Netizenship Today: An Interview

Questions by: Daniela A Baszkiewicz-Scott
Responses by: Ronda Hauben

Question #1: Five years ago, you and Michael published Netizens, a study of the history and prospects of communication on the Internet, specifically through the most common and popular medium of USENET. The book added a new coinage to the English language and implied a particular vision of where the net could carry us. What was that vision then, and has your sense of it changed at all over the past decade, and if so, how?

Answer #1: While Netizens was indeed published in a hard copy version in 1997, it was first put online almost 10 years ago, in 1994. In 1992/1993, Michael did his research and posted the summary in his article "The Net and the Netizen." So actually Michael's work discovering net.citizens and then formulating the concept of netizen, is 10 years ago this year.

What Michael's research taught him, was that there were people online who functioned as citizens of the Internet and USENET. These were people who participated in making the Internet something valuable to people around the world. Among those who recognized the importance of the Internet as a new communication medium, there was the special concern to make low cost or free access available to all people who wanted to be online. These were some of the characteristics that Michael recognized of users who were acting as "netizens," or as citizens of a broader entity than a national geographic entity. Michael's vision of the potential of the Internet, and the vision of a number of the users who wrote him, was of an online medium that would make it possible for people to be able to participate in the decisions that affected their lives. Michael wrote about this in his article "What the Net means to me" (See ACN Vol. 11 No. 1. http://www.ais.org/~jrh/acn/text/acn11-1.articles/acn11-1.a13.txt.)

What has happened in these 10 years?

There are others who are "netizens" in the finest tradition. They are continuing to uphold this vision and to help it to become a reality.

The Internet is going through difficult times in terms of its promise as a participatory global communication system available to all who want access. The conception of the netizen, however, is very much alive and is helpful in supporting those who continue to work toward this goal. Searching online in a search engine under netizens turns up almost 100,000 entries. Michael noted that the netizen was someone who acted as a citizen of the Internet. He also observed that there was another usage that developed after he popularized the term. This second usage refers to any net user as a netizen. There are dictionaries that recognize this distinction, for example, the *Oxford English Dictionary*. It defines a netizen as a participant in the online community. Other sources like the *Glossary of Internet Terms* describes a netizen as: "Derived from the term citizen, referring to a citizen of the Internet, or someone who uses networked resources. The term connotes civic responsibility and participation." (http://www.matisse.net/files/glossary.html#N)

Still others like the Polish researcher Leszek Jesień examine the essence of the citizen as the ability to participate in the processes of governance. The neti-

zen provides Jesień a model to be investigated. (See for example "The 1996 IGC: European Citizenship Reconsidered." "Instituets fur den Donauraum und Mitteleuropa," March 1997, p. 2.)

Michael spoke about the importance of everyone being able to be online, as part of the vision of the netizen. Also, he noted the need for people to have the time in their lives to be able to participate in the affairs of the Internet's development. How this can happen, only the future will tell. A possible model exists in the U.S. This is the process set up for citizens to have time in their lives to serve on juries. When citizens are called for jury duty, they are paid by their employer or given some reimbursement by government for the day. This is a model to consider when looking at what will be needed for netizens to be able to participate actively in the Internet's development.

In these past 10 years, the concept of netizen has been embraced by many people around the world. In our book *Netizens: On the History and Impact of Usenet and the Internet* Michael wrote several chapters looking at various developments. One chapter is chapter 13, about the press, another is chapter 14 about the U.S. government policy advisory online conference held in 1994. In his article on the development of the press, Michael noted that the netizen as a citizen reporter will greatly enrich the news that is available to the public. (See "The Effect of the Net on the Professional News Media: The USENET News Collective and Man-Computer News Symbiosis.")

While Michael documents instances of this in his chapter on the press, there continue to be many other instances. More recently, for example, on February 8, 2003, the *New York Times "*News of the Week in Review" section printed a transcript of an online discussion of people monitoring the reentry of the Columbia shuttle back into the earth's atmosphere. They document their observations of its breakup as it entered the earth's atmosphere.

What progress has these 10 years brought for the Internet as a participatory communication medium? Many people around the world try to utilize the Internet to influence their governments on a wide range of issues from local housing concerns to broader efforts to prevent or stop war. The concept and vision of the netizen is developing broadly and widely, though it is not always visible. There are, however, rare times, like the February 15, 2003 anti-war demonstrations around the world, which were possible because they could be coordinated and supported by citizens utilizing the Internet. Citizens could work together to communicate with each other and their government to oppose a war being waged against the people of Iraq.

The vision that Michael documented was of the Internet as a platform for democracy, or as a laboratory for democracy. The Internet provides the medium needed, and the netizens are the researchers who explore how this medium can be helpful. I was invited to a seminar in Finland in December 1999. This seminar was part of a European Union sponsored conference exploring the ability of citizens to influence the decisions made by their governments. There was general dismay at the conference about the inability of most citizens to have an impact on government decisions. The seminar I participated in explored whether the Internet could make such participation possible. A journalism researcher from Finland told of the frustrations of Finnish citizens in trying to get their local government representatives to listen to their views. She proposed that it was important for citizens to document their efforts to influence their representatives before they could expect to succeed. Her research was part of a process of exploring the barriers for citizens to achieve this goal. To have such research ongoing and presented at a conference was an important advance. Also a government official at the seminar responded that after representatives are elected they feel it is appropriate to act according to their own judgement. They are not required to listen to their constituents.

The EU Conference was held on December 2, 1999, just days after the protests in Seattle (in November 1999) in opposition to the World Trade Organization (WTO). Some of those attending the European Union (EU) conference in Finland had come from Seattle. They were excited by the breathe and diversity of those protesting in Seattle.

Michael's research, done over 10 years ago this year, has set a basis for continuing research on the impact of the Internet, not only on its own development, but also on the development of the larger society.

It will be good to see this research continued and enriched.

Question #2: Certainly, one of the things that has changed has been the makeup of the populace of the Internet. Alongside the old elites and normal, peaceful people, a vaster public of less clear ideals and commitments, even including a significant number of hooli-

gans and sociopaths, has appeared. With such a public, can one still dream of a magical civil society for which the net will be the "carrier" of democracy?

Answer #2: This is an interesting question as it assumes that all those who participated in the early development of the Internet were "elites." This is not accurate. From the early development of the Internet and USENET there were people who explored how to support collaborative activities and communication versus those who wanted the Internet and USENET to serve their narrower purposes. Also, contrary to all the myths of the Internet developing apart from government and government regulation, the Internet was nourished by the early forms of government regulation that functioned to protect it. The Internet was born as a government project under the leadership of the Information Processing Techniques Office (IPTO), an office within government. Through much of its 30 year development, there was an Acceptable Use Policy (AUP) that specified that the use of the system should be one with public purposes and forbid self serving purposes. Similarly, USENET had a mechanism for system administrators to hold users responsible for following certain standards of behavior. Those users who violated these standards were limited or deprived of access to USENET.

The current period is not the first time that there are users who abuse the Internet and other users. Governments like that of the U.S., however, have ceased to provide citizens and netizens with protection from those who are abusive.

There are counter efforts ongoing as well, however. How this will develop, time will show. But there is much to learn from the early development of the Internet and the role played by government and online administrators to encourage constructive activity by users.

Question #3: There would seem to be other potential challenges to direct democracy and human rights today, but there is one of particular relevance to the net and to Europe, which has been a subject of particular interest to you in your recent study of the internet, namely, that of language barriers. These barriers appear capable of dividing united and still uniting Europe into a society of e-aristocrats and e-outcasts, since, through no fault of their own, some peoples were long cut off from the language which is now emerging as the universal e-language: English. Can an individual learning English as a new language, or for whom English is a "distant second" language have the opportunity of truly free expression, at the same time as the European Union becomes a single society with a common bureaucracy, officialdom, and system of government which will need to be controlled by its citizens?

Answer #3: This question has two parts.

The first refers to the development of English as a standard language online. There are, indeed, many people around the world who use the Internet, but who don't speak or write English. English is clearly not a common language at present, though it is used sometimes to try to make communication possible among those with different languages.

A common language allows people from different countries to communicate. However, this is a burden on those who don't know this language.

Rather than a common language, there are translation programs online. One can put text into these programs and learn some of what is being said in different languages. While these programs are still primitive they are being used by people to communicate with others who speak different languages. Also there are certain words that have developed as part of the Internet's development, like the word netizen, which are being adopted as a common vocabulary in countries around the world.

These are merely beginning steps toward trying to make communication possible among people who have different native languages. On USENET and the Internet, there are posts, mailing lists, websites, and USENET newsgroups in many languages. This makes it possible for people to participate in the languages that are their own first languages, the languages they are most comfortable in.

The Internet is not only helping to spread the means for people to communicate with those who speak other languages, but it is also beginning to create some common terms used online. Most importantly, however, it is spreading the desire for and the possibility of communication among people who speak many different languages.

The problem of making communication possible among people who speak different languages is a very real problem. It will take the efforts of many people to solve it. The Internet and netizens are contributing to the effort to explore and solve this challenge.

The second part of the question is about how

citizens will be able to control governing institutions like the European Union. This is a broader question which I will respond to as part of the promise of e-democracy which you ask about in question 5.

Question #4: Another significant brake on e-democracy would appear to be the uneven system treatment of freedom of expression in different countries. In the United States and, more recently, Great Britain, a set of civil liberties are in force, in which a particular emphasis is placed on freedom of speech. However, in many countries of Western Europe and Central Europe (now seeking membership in a united Europe) a person can go to jail for opinions about a politician expressed on the net, since harming the "good name" of the politician is punished by the criminal code. In Poland, for example, "slandering" a politician is addressed not by the civil courts, but by the prosecutor paid by the taxpayers. In this way, free exercise electronic media can be treated as an instrument of crime. What are your thoughts about this problem?

Answer #4: Will the internet and netizens be able to help netizens in Poland fight these restrictions? This is a question to be explored. This is needed for the further development of the Internet in general, and in Poland, in particular.

Both the origins of the Internet and its continued development require the ability to freely discuss diverse views via a grassroots connection of people. Michael documented this in chapter 2, and 7 of *Netizens*. The U.S. government was trying to outlaw the freedom to express one's views on the Internet when the U.S. Congress passed the Communications Decency Act, (CDA) in 1995-1996. There was much protest online and offline against the law. This pressure was helpful in setting a basis for the decision of the U.S. Supreme Court when they voted that the CDA was unconstitutional in the Summer of 1996.

Those online, whether in the countries of East and Central Europe, or in the countries around the world, value the Internet and the ability to explore diverse viewpoints online.

It is a serious problem that in Poland a person can be tried for their criticism of a politician. I would hope a way could be found to have an online campaign against such laws as they not only harm people in the present, but they will make it more difficult in the future to develop both the technology and the social environment for the technology and the people to flourish.

Perhaps the ability to publicize such problems via the Internet will make it possible to change such laws, like the experience of the online community in overturning the CDA.

Question #5: Do you expect the United States, as a country which, at least, has the right of the citizen to free expression included in its constitution, to move more quickly toward e-democracy than other parts of the world as a result of technological progress, or do you see barriers blocking a movement toward e-democracy here as well? To put it differently, what conditions must be realized for society to move toward the model of e-democracy that has been sketched out at various international gatherings recently devoted to this subject?

Answer #5: There are a variety of e-democracy models, from putting government administrative functions and services on the Internet to cheapen the cost of government, to encouraging citizens to discuss problems from a broad diversity of viewpoints in order to find the means to solve them. Examples of the latter are included in the chapters in *Netizens* on the online processes to involve citizens in policy discussions. (See Chapters 11 and 14)

The 1999 European Union conference in Finland raised the question of how citizens could have more say in the decisions of their governments. The researchers and other participants in one seminar descried how citizens in many countries around the world faced this problem. The U.S. is no exception. Despite the constitutional right to protest government activity in the U.S., the city and federal government refused to allow a march in New York City on February 15, 2003 to protest war against Iraq. Also the police prevented massive numbers of people trying to attend the legally sanctioned rally from being able to get to the rally.

What conditions are needed to make e-democracy a reality? People need low cost or free access to the Internet. They need enough leisure time or paid work time to participate in forums on public questions. For example, in the U.S. citizens are paid by their employers to participate in jury activity. A similar process is needed for citizens to have the time and income to be able to participate more broadly in public affairs.

Another condition is the need to have this participation affect the decisions made by government offic-

ials. If there is no sign that citizens' efforts have any effect, then it appears fruitless to make the effort.

In a paper, "The 1996 IGC: European Citizenship Reconsidered" published in March 1997, Leszek Jesień explored the views of a number of political theorists to determine what is essential for citizenship. His conclusion is that the ability of citizens to participate is critical. Comparing the development of netizenship on the Internet and citizenship, Jesień writes (Jesień, 15): "Almost in front of us, and almost unnoticed the new kind of citizenship is evolving … . But using the Internet today is a sign of belonging to the elite, to those who exchange ideas, who participate in something important, in a common cause. There is no question of governance there, nor the question of representation, but there is a full, ultimate and direct participation … . At the time the European Union struggles to shape the European citizenship with much effort and little success, the other citizenship – Netizenship – emerges. The IGC negotiators and European political leaders should perhaps look at this phenomenon with sympathy and attention."

The ability of netizens to participate in the activities of the Internet is a fruitful model for the future of citizenship around the world. The "netizen" online is the networking citizen who accepts the obligation to contribute to the Internet's development and to the direction of its future growth. The Internet functions as a laboratory of democracy. It has done this best, however, when there have been prohibitions against the abuse of online processes, like the Acceptable Use Policy (AUP) that helped to support constructive activity online from 1985-1995. There is a continuing need to learn how to support and protect the online user and the netizen, to make it possible to realize the potential for e-democracy that the Internet provides.

[Editor's Note: This article appeared in the English language newspaper, *The Korean Herald*, on July 18, 2007. It describes a celebration four days earlier on July 14 which was ten years after a similar celebration on July 14, 1997 welcoming the publication of a book by Michael and Ronda Hauben.]

Netizens Celebrate a Decade of Activism

Michael Hauben's Legacy Lives On, Ten Years after the Release of the Book 'Netizen'

by Claire George

On a sunny afternoon last weekend in Manhattan a group of well-wishers met to celebrate the 10th anniversary of the print edition of *Netizens: On the History and Impact of Usenet and the Internet* by the late Michael Hauben and his mother and co-author, Ronda Hauben.

"Netizens," which first appeared online in January, 1994 was one of the earliest books to examine the development of the internet as a social network. In it, Michael Hauben expressed his hope for the internet's use as an aid to global human cooperation.

At Saturday's gathering Michael's father, Jay, told listeners: "The lesson for me is to learn from Michael to have confidence in the wonders the net can produce. Whenever I read some chapter in 'Netizens,' I always have the same sensation. I want to participate more on the net. I still want to be a netizen."

Michael Hauben invented the term netizen by combining the words citizen and internet. He defined citizens of the net as people who, "understand the value of collective work and the communal aspects of public communications. These are the people who discuss and debate topics in a constructive manner, who e-mail answers to people and provide help to new-comers, who maintain public information repositories. They are not people who exploit the web for their own personal gain."

The new word spread across the world and is now in common use in English, Korean, Japanese, Italian and other languages. Michael Hauben died in June, 2001 at the age of 28 from injuries sustained in a car accident in 1999. But his legacy lives on in an idea that has become an inspiration for people who believe that the internet is a force for good.

Speaking to *The Korea Herald* from her home in New York, Ronda Hauben expressed her "delight" in the achievements of Korean netizens. She says that

Koreans should be proud of the role played by "netizen scientists" in the affair of the stem cell researcher Hwang Woo-suk and cites Korea's contribution to the development of citizen journalism as being of particular importance.

"There are conservative forces in the U.S. trying to create another attack on the United Nations like the scandal they created around supposed corruption in the U.N. in the 'oil for food program.' I haven't seen this challenged in the U.S. press, but it was challenged by netizens in Korea," she said.

"There are many similar examples," Hauben continued, "I can only read English accounts of what is happening, but even so when I look I see valuable examples of netizen activity."

In her own life as a netizen journalist and featured writer for OhMyNews International, Ronda Hauben covers the U.N. and U.N. related developments. She believes that U.N. Secretary-General Ban Ki-moon needs press coverage like that provided by progressive netizens in order to operate effectively.

"If only the conservative press such as the *Wall Street Journal* and Fox News and so on, didn't focus so much on supposed scandals that aren't scandals, then he would not be trapped into responding to things that are being made into issues but aren't the real issues," she said.

[Editor's Note: The following was read on May 1, 2007 at a small gathering to mark the 10th Anniversary of the book, *Netizens: On the History and Impact of Usenet and the Internet,* written by Michael Hauben and Ronda Hauben in the early 1990s and published in 1997. A version of that book is online at: http://www.columbia.edu/~rh120/]

Welcome to the 21st Century and to the Wonderful World of the Net

by Jay Hauben

Ten years ago on July 14, 2007, 40 people gathered in a bookstore near Columbia University in NYC to help launch the hard cover edition of the book, *Netizens: On the History and Impact of Usenet and the Internet*. They came to a book reading party with the authors, Michael and Ronda and a representative of the IEEE Computer Society Press, the publisher.

The amazing thing they heard and to which some there objected was how solid was the democratic foundation of the newly emerging Internet and how pervasive might be the changes facilitated by the Net. Michael had written of his vision of a 21st Century where each netizen could be an active global citizen thanks to the connectivity the net makes possible. He saw that a large part of the necessary infrastructure was in place and a more democratic world is becoming possible. He read from his chapter "Exploring NYC's online Community: A Snapshot of NYC.general." The reading stimulated a vigorous and contentious discussion with some welcoming the Internet and others disbelieving that the net would be a positive force for greater democracy.

Now we are here today ten years later. Perhaps the discussion can continue as we look again at the concept of and the book Netizens. Ronda and Michael gathered in the book solid historical evidence and contemporary practice for their thesis that something big was happening which would take a mighty fight to defend but which could profoundly change the media, politics, social life and even economics. Big things have happened: e-mail, World Wide Web, citizen journalism, Google searches and blogging to name a few. But except for e-mail and citizen journalism these were only the lessor part of what Michael foresaw. He was envisioning more profound human to human communication and intense discussions like those on USENET. I wonder when more of Michael's vision will come.

My guess is that it might not be necessary to wait a few generations for more new big changes. Maybe they are beginning to happen and we don't see them. The cartoon at the beginning of Netizens shows what we are looking for might be so big we might not be looking in the right way to see it.

There is in the U.S. an election next year, 2008. In the last election the big surprise was Howard Dean and 400,000 Deaniacs. What might the surprise be next year? Also, Ronda has worked to see an Ohmynews in the U.S. Might that ever happen?

I think the lesson for me is to learn from Michael to have confidence in the wonders the net can produce despite the hard fight they will take. Whenever I read some chapter in Netizens, I always have the same sensation. I want to participate more on the net. I still want to be a netizen.

Welcome to the 21st Century and to the wonder-

ful world of the net.

[Editor's Note: The following speech was presented in front of the CCTV communications tower in Beijing on September 14, 2009 as part of the first national Netizens Celebration Day sponsored by the Internet Society of China.*]

First Netizen Celebration Day Held in Beijing, China

Honoring the Netizen

by Ronda Hauben

I would like to thank the Internet Society of China for inviting me to offer brief remarks today. I want also to congratulate the honored guests for their role in helping to make possible the development of the Internet and the emergence of the Netizens.

It is wonderful that China is holding this netizen day, the first ever to be held anywhere in the world. Often there have been events celebrating the origin and development of the Internet but only rarely has there been recognition offered for the netizen, for those online users who have taken on to contribute to the development and spread of the Net and to making possible the better world that more communication among people will make possible.

The concept of netizen comes from the research and writing of Michael Hauben while he was a college student in the early 1990s. Michael was interested not only in how the Internet would develop and spread, but also in the impact it would have on society.

In 1992 he sent out a set of questions across the computer networks asking users about their experiences online. He was surprised to find that not only were many of those who responded to his questions interested in what the Net made possible for them, but also they were interested in spreading the Net and in exploring how it would make a better world possible. Network users with this social perspective, or this public interest focus Michael called Netizens. Thus the Netizen was not all users, but users with a public purpose.

Another aspect is that the Net is international, so that netizenship isn't a geographically limited concept. To be a netizen is to be not only a citizen of one country but also a citizen of the Net. These users are citizens who were empowered by the Net, or netizens. Based on his research, Michael wrote the article "The Net and Netizens: The Impact the Net has on People's Lives." The article and the concept of the Netizen spread around the world via the Internet.

Michael and I included his influential article as part of a book titled *Netizens* which we put online on January 12, 1994. Today's celebration of Netizen Day in China is for me also a fitting celebration of the 15th anniversary of putting the first edition of the book "Netizens" online.

Though today is the first national netizen day, I have recently seen on the Internet a call for a World Netizen Day. So the importance of establishing a netizen day begun by the Internet Society of China is a proud beginning of what I hope will become a new tradition, recognizing the importance of the contributions made by Netizens to the continuing spread and development of the Internet.

Congratulations not only to those who have been honored here today, but to all netizens in China and to netizens around the world. May the tradition of the netizen, along with the development of the Internet, grow and flourish.

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* For a Youku video of part of the speech with the translation into Chinese see: http://v.youku.com/v_show/id_XMTE5MTY3OTuy.html. There were a number of online accounts in Chinese of the September 14 event. Here is one URL: http://tech.qq.com/zt/2009/wangminjie09/#top/.

[Editor's Note: The following speech was presented on May 1, 2012 at a luncheon in NYC at a celebration of the 15th Anniversary of the print publication of Netizens.]

My Thinking on Netizens

by Xu Liang

In 1999, when I went to college, it was the first time for me to touch the internet. I still remember clearly the experience that day. I carefully got access into a website and browsed some news. Later I registered an e-mail address and sent my first e-mail. Afterwards I learned to chat online. The first time is always very fresh and exciting. But after, the excitement diminished, I thought that the internet did not change our lives as much as what was described by others. I still remember I told to my roommate of my

disappointment. He was an amateur with the computer thinking that the internet could not do any more than e-mail and browsing news. I admitted that the internet did make our lives much more convenient and more fast than before, but it just substitutes for the role of newspapers, radios, and televisions. These inventions did not change the historical trail, neither did the internet. This was my opinion at that time.

In recent years, with the popularization of the internet, the internet was more and more necessary in our lives. I roughly spend a quarter of a day in internet. What is more important, we witness the power of the internet and social media in some big things, like the major railway crash in China, Arabic Spring, the Occupy Wall Street movement and so on. I gradually realize that I underestimated the impact of the internet before. I am not sure if the internet will change the trail of human history, but I am sure that the internet does change the structure and management of human society. Why? First, the internet gives us another spacious space. In the cyber space, the demarcation of nations, classes, parties, groups and professions becomes vague. Identities and status of people are not set by the society. Second, the internet gives us another source of power. This power is not less than the invention of the atomic bomb. But the internet is different from the atomic bomb. The latter can be monopolized by a few people. The former should be shared by everyone. Actually, the bigger the power is, the fewer people have the atomic weapons, while the bigger the power is, the more people share the internet. Each internet user is both a source and a holder of the power. With great power comes great responsibility. In tradition, a few elites manage the society and make decisions. Now everyone can participate in the management and influence the decision-making process.

Let me go back to Michael and Ronda's book, *Netizens*. I have to admit the book is very visionary. It was not just because it foresaw the drastic social changes brought by the internet in early 1990s before I touched the internet, but what more important is that the book offers us a blueprint or a way for our future society based on the internet, that is the netizen.

What is the netizen? According to the Haubens' introduction to me, the netizen does not equate to the internet user. Only those internet users who abide by a set of moral norms and do good things are netizens. They imagine that the netizens would be the mainstream in the cyber society and it would give birth to a good and equal society in reality which would break away from the traditional minority-ruling-majority model. Marx and many Communists once tried to construct such a perfect society. They failed in practice. The internet and netizen probably provide a technological tool and a different way to realize the dream. This is our best wish.

However, we also should know it is a long way to the theory applying to the practice. The formation of the civil society in a real world tells us we cannot expect a netizen society would form very soon. Like the civil society is based on the rule of law, the netizen also should be based on a set of norms. But the formation of norms must be a free, open and voluntary process. Any government and organization should not make out such norms in the name of netizens, or the netizen society would repeat the tradition model.

[Editor's Note: The following are greetings received by May 1, 2012 and read at the celebration of the 15th Anniversary of the print edition of *Netizens: On the History and Impact of Usenet and the Internet* by Michael Hauben and Ronda Hauben released on May 1, 1997.]

Greetings on the 15th Anniversary of the Print Edition of Netizens

1) From San Francisco, California
Dear Jay and Ronda:

I clearly remember the time when you both shared with Larry and me the concept of Netizens and the scope of the Netizen book. I was intrigued because it was so different, and Larry was immediately captivated by what he called the 'universality of the concept.'

The three of you actually started a movement that has circled the globe! Think about that. So few of us ever make a contribution of that magnitude. As is often recorded over time, the originators don't always get the credit for the best of ideas … although personal credit was not ever high on your agenda. You have the knowledge that your ideas indeed have caught hold and are being replicated in many ways across the world, improving communication in society and challenging old parameters.

I congratulate you on your achievement!
With respect and love, Margaret.

2) From a Japanese Network activist who accompanied Michael in 1995 when Michael was invited to Japan
Dear Jay,

Thank you for your kind invitation.

I am doing fine, was asked to give a talk in India a few weeks ago on "Netizen" at the Internet Governance related conference and mentioned about Michael and the Book, remembering you all.

I have cced this to Prof. Kumon and also Ms. Chika Sekine who met Michael at the Hypernet conference back in '95, I believe, when we invited Michael.

Will try to send some words.
Best, Izumi

Later Izumi sent this greeting: "Netizen" is really a special term for us, in the mid '90s when we found the Internet, I felt "this is it." The term Netizen very much symbolizes what we have been looking for – an active, free-spirited being, no specialist, crossing the border of cultures, states and minds on the planet. We owe a lot to people who coined this term and nurtured the concept. Thank you,

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3) From the Chairperson of the Internet Society of China
Dear Jay,

Netizens in China are happy to catch the opportunity of Internet age to participate and improve themselves from the participation. It's a great historical process for the Chinese Nation!

This is what I'd write in honor of the 15 anniversary of the book "Netizen."

Wish you and Ronda have a nice gathering with friends.
Qiheng

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4) From an Internet research scholar in France
Dear Jay, Dear Ronda,

Thank you for your message! I was very happy to read about the luncheon you're organizing to celebrate the 15th anniversary of the publication of Netizens, and if I had been in New York, it would have been a pleasure to participate. So here's my small contribution to the event:

Sixteen years ago, I started working toward a Ph.D. on the political uses of the Internet at University Paris 7. At the time, in France, few people were connected to the Net outside universities, and I felt the need to explain the origins of the network. But where was I to find the books? Remember 1996: no Amazon, no Google, and buying a book overseas meant a lengthy mail-order process, often taking over a month. So you can imagine my joy when I discovered Netizens, available online on the University of Columbia's server, and for free, too! It was truly amazing to me, and the very fact of finding it got me thinking about the gift economy of the internet. Netizens is a landmark study from which I learned and quoted at length. Its worldwide readership testifies to its importance in the field of Internet studies.

[I think I first came across Netizens as a posting in one of the USENET newsgroups I was following at the time (uspolitics, if I remember correctly). I was so happy to have found it that I printed out entire chapters :-)]
Happy celebration, and all the best from Vivian

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5) From Berlin, Germany

From me too, of course … the book was a real milestone … we all also remember Michael fondly, of course … .
Ron

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6) From Bloomfield Hills, Michigan
Dear Ronda and Jay,

We thank you for your invitation to the luncheon, and are sorry that geography prevents us from being there. Don't forget to put a blurb in your local papers about the anniversary to get a little publicity. The Netizen book was assigned to Tom in an Information Technology class at the University of Michigan. The professor believed that the internet would be a universal vehicle of trading ideas, and of course she was right.

Congratulations that your book is still as relevant as it was 15 years ago. We are certain that this ceremony is greeted as enthusiastically as the original event.
Best wishes, Tom and Olga

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7) From Oita, Beppu Bay Japan
(15th Anniversary of the hardcover book Netizens Celebration)

My dear old memory of Michael Hauben

In 1995 April, I heard that Mr. Michael Hauben, the inventor of the word "Netizens," was scheduled to visit Oita, a small local city in southwest part of Japan. I was very excited and decided to welcome him. A boyish-looking young man who has just grown up to an adult appeared through the conference room door and said hello. It was Mr. Michael Hauben from the USA.

First, I had sent him a welcome message through the E-mail saying please come to Oita Japan. Michael kindly checked the Internet in advance to learn where I was and what I was interested in. He prepared "A little New York Cookbook" and presented it to me. I was really delighted to see the lovely, tiny book filled with beautiful illustrations of cookies and other simple foods. I picked up some of them and actually cooked them in home. I took the pictures of the dishes and posted to the Internet. Michel was delighted as well. http://www.coara.or.jp/~mieko/cheese.htm

New York is my long-cherished city. In 1998, I sent him a message to visit NYC and finally could meet not only him but also his parents in the city. I carried his book *Netizens* Japanese version with me and asked him to put the author's message on it. I also visited his apartment and exchanged greetings. This was a great memory in my life.

I don't like to use the subjunctive mood if he were alive, but he had passed away too early, too young. I wish him to watch the developing Internet world and network citizens much and much more. If he were here, he would have invented another new concept of Netizens.

I highly value the memory of Michael Hauben and pay my respects to Michael's parents Jay and Ronda who strongly promote the Netizenship all around the world. I and my husband Ken are very proud of being the everlasting friends of Michael Hauben who is now smiling and silently watching us from Heaven. Yes, Michael lives forever in our hearts.
Mieko

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8) From Shanghai, China and for this year, NYC

Netizens change the world, especially China. Thanks to the internet, we can make our voice heard now. That's what I want to say.
Hanting

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9) From Beijing, China

It is an important celebration for the 15th anniversary of the book: *Netizens: On the History and Impact of the Usenet and the Internet*. I am very glad to give a greeting.

Netizens is a power of people. It is our unprecedented option to impact the style of society, more importantly, to create the ideal world existing in all the peoples' hearts around the world. Everyone who uses the internet to make our world better, especially the pioneer who discovered the Netizen's story, turned the Netizen from a rhetoric word to a new media, new life and new power. I want to give my honor and respect for them, I know Michael is one of them. I want to thank him, and I also will do my best to continue this job without salary, only with my conscience and responsibility.
Yunlong

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10) From a Senior IT Professor, Lucian Blaga University, Sibiu, Romania
Dears Ronda and Jay,

I am very happy that this seminal and beloved book is now a "surprisingly mature teenager" and I greet from all my heart the initiative to pay tribute to the book itself and to its authors. Moreover, I think that the message is as important as it was from the very beginning, I am proud to be a virtual participant now at the Anniversary as well as an enthusiast reader 14 years ago (when I translated the key concept of Netizen), and I look forward to similar influential messages.
All the best, Boldur

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11) From a Professor in Political Science, Waseda University, Japan

Congratulation of the 15 years of your book on "Netizens."

The word "Netizen " became popular now in Asia. My "Global Netizen College" in Japanese had about 1.5 million accesses:
http://netizen.html.xdomain.jp/exchange.html
http://netizen.html.xdomain.jp/Home.html
and there are over 2.5 million websites which use the Japanese word "Netizen" by Google search.

In South Korea, Netizen is one of the most popular words for their communication, like "netizenship," "netizen vote" or even "netizen revolution."

In China, the biggest internet country in the world, made the new word "Netizens" in Chinese Wikipedia, as Ms. Ronda Hauben reported in detail in "China in the Era of the Netizen." http://zh.wikipedia.org/wiki/ (This page links to the netbook and to Michael's netbook page.) http://blogs.taz.de/netizenblog/2010/02/14/china_in_the_era_of_the_netizen/.

Thus, we might be proud of our tasks as a pioneer of the "Rights of Netizens" http://www.columbia.edu/~rh120/netizen-rights.txt.

I hope your further activity for the freedom of expression and your good health.
Yours, Tetsuro

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12) From Berlin Germany
Dear Jay and Ronda,

Wendy and I congratulate you to the 15th anniversary of _Netizens_.

The tools used by netizens have evolved enormously over the course of time. Electronic communication has developed from bulletin boards through mail lists and USENET, on through Web-based forums and text messaging, and now on to Facebook and Twitter. Some of the older modes of communication are still in use; others have, by and large, fallen by the wayside. And it remains to be seen how the commercial aspects of the newer forms will play out, as well as how attempts by governments around the world to regulate and control Internet communications will affect our usage of electronic media.

Certainly these tools have been used to advance political goals (both admirable and, sometimes, less admirable), and I am sure others will want to say more about this topic.

From my perspective, electronic communications have also been an essential tool allowing me to communicate with others who share my involvement in a programming language called Max/MSP. This is a system relatively few people are aware of outside of the fields of computer music and digital audio production. Indeed, it was originally known primarily only in a handful of universities and research centers studying acoustics and electronic music. The power of Internet communication is that it has allowed people, spread extremely sparsely around the world, to form an intensely supportive community. We have shared knowledge, helped each other solve problems, spread news of exciting projects and even professional work opportunities. And this vital community has continually provided a platform for more people to become engaged, from new users of Max/MSP struggling with their first projects through to highly experienced users and the original developers of this software tool. And, as this community has grown, so we are now seeing Max/MSP being used to shape sound in radio and television broadcasts, theaters, even by commercial sound design for leading international enterprises. The chances are that something you recently heard – be it the 'snap' of some digital camera, sound effects on a television program or on stage, or a hit record on the radio – was shaped with Max/MSP. I was recently involved in a project to develop ways of allowing children with special needs, particularly extreme physical disabilities, to actively participate in music making. This would not have been possible without the software tool

Max/MSP, but it would also not have been possible without the dissemination of knowledge about this software facilitated by netizenship.

Wendy and I wish Jay and Ronda continued success in their work with actively encouraging netizens to form new activities. We sincerely hope that more and more of these will be forces for betterment – socially, scientifically, artistically, and politically – around the world.
With all best regards, Peter and Wendy

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13) From the Secretary General of the People's Solidarity for Participatory Democracy Seoul, South Korea
Dear Ronda and Jay,

Congratulation on the 15th anniversary of the release of "Netizen." Nowadays, Netizens in the world are playing a crucial role for changing the world. Communication online with internet has been helping participatory democracy to develop.

Thank your family for excellent researches and activities in promoting participatory democracy.
Best regards, Taeho

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14) From Yaoundé, Cameroon (West Africa) 2009
Dear Ronda,

I am happy to be in contact with an author I did appreciate and lengthily quoted in an important paper. As an anthropologist, I could only use a limited aspect of your research. I do hope I will learn more from you as far as connecting people around the world is concerned. In the MOST program, the concern is the

linkage between research and public policy, i.e., scientific results and decision making. Netizenship is another scale of linkage among the people around the world. Netizenship is therefore a key point to raise and to work on, precisely as the world is going as liberal as global. I must however tell you how inspiring your book was to me for that specific point.

Lets us keep in contact. And please, extend my regards to your close friends or collaborators.

Best wishes, Charly

---

15) From Piscataway, New Jersey

The most striking thing to me about Netizens is that it seemed to predict how the internet could be used. When the book was written, the internet was not part of the mainstream in the way it is now. There were online communities, and it seems that there was a togetherness and an openness online, which helped inspire Michael's ideas. But maybe those communities were more limited at the time, simply because there were not as many internet users. Their impact was harder to see in the world. Recently, we have been seeing the internet used as a tool by movements like the revolutionaries in Egypt and the Occupy movement here.

With the internet's widespread use there comes conflicts. There have been debates over net neutrality, and in general, it seems to be more and more commercialized. But also with such wide use, and because it still does have an openness, it can be a very effective tool for democratic movements.

Mitchell

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16) Anonymous:

"Netizens around the world stand with you now"

[Editor's Note: The following is a slightly edited version of a talk presented on May 1, 2012 at a luncheon celebration in honor of the 15th Anniversary of the publication of the print edition of the book *Netizens*]

Netizens and Communication A New Paradigm

by Ronda Hauben

I. – Looking Back

On May 1, 1997, the print Edition of *Netizens: on the History and Impact of Usenet and the Internet* was published in English. Later that year, in October, a Japanese translation of the book was published. In 2012, we are celebrating the occasion of the 15th Anniversary of this event.

In honor of this occasion I want to both look back and look forward toward trying to assess the significance of the book and of Michael Hauben's discovery of the emergence of the netizen. I want to briefly look at what has happened in the interim of these 15 years toward trying to understand what new advance this development makes possible.

By the early 1990s, Michael recognized that the Internet was a significant new development and that it would have an impact on our world. He was curious about what that impact would be and what could help it to have a beneficial impact.

The book was compiled from a series of articles written by Michael and by me which were posted on the Net as they were written and which sometimes led to substantial comments and discussion.

The most important article in the book was clearly Michael's article, "The Net and Netizens: the Impact the Net Has on People's Lives."

Michael opened the article with the prophetic words, which appeared online first in 1993: "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." [*Netizens*, Chapter 1, p. 3]

Michael goes on to explain that what he is predicting is not yet the reality. In fact many people

around the world were just becoming connected to the Internet during the period in which these words were written and posted on various different networks that existed at the time.

But fifteen years after the publication of the print edition of *Netizens*, this description is very much the reality for our time and for many it is hard to remember or understand the world without the Net.

Similarly, in his articles that are collected in the *Netizens* book, Michael looked at the pioneering vision that gave birth to the Internet. He looked at the role of computer science in the building of the ARPANet network, at the potential impact that the Net and netizens would have on politics, on journalism, and on the revolution in ideas that the Net and netizens would bring about, comparing this to the advance brought about by the printing press. The last chapter of the book is an article Michael wrote early on about the need for a watchdog function over government in order to make democracy possible.

By the time the book was published in a print edition, it had been freely available online for three years. This was a period when the U.S. government was determined to change the nature of the Net from the public and scientific infrastructure that had been built with public and educational funds around the world to a commercially driven entity. While there were people online at the time promoting the privatization and commercialization of the Internet, the concept of netizen was embraced by others, by many who supported the public and collaborative nature of the Internet and who wanted this to grow and flourish.

The article "The Net and Netizens" grew out of a research project that Michael had done for a class at Columbia University in Computer Ethics. Michael was interested in the impact of the Net and so he formulated several questions and sent them out online. This was a pioneering project at the time and the results he received back helped to establish the fact that the Net was having an important impact on a number of people's lives.

Michael put together the results of his research in the article "The Net and Netizens" and posted it online. This helped the concept of netizen to spread and to be embraced around the world. The netizen, it is important to clarify, was not intended to describe every net user. Rather netizen was the word to describe those on the Net who took up to support the public and collaborative nature of the Net and to help it to grow and flourish. Netizens at the time often had the hope that their efforts online would be helpful toward creating a better world.

Describing this experience in a speech he gave in Japan and which subsequently became the Preface to the *Netizens* book, Michael explained: "In conducting research five years ago online to determine people's uses of 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." [*Netizens*, Preface, p. ix]

Michael's work which is included in the book and the subsequent work he did recognized the advance made possible by the Internet and the emergence of the Netizen.

The book is not only about what is wrong with the old politics, or media, but more importantly, the implications for the emergence of new developments, of a new politics, of a new form of citizenship, and of what Michael called the "poor man's version of the mass media." He focused on what was new or emerging and recognized the promise for the future represented by what was only at the time in an early stage of development.

For example, Michael recognized that the collaborative contributions for a new media would far exceed what the old media had achieved. "As people continue to connect to USENET and other discussion forums, the collective population will contribute back to the human community this new form of news," he wrote. [*Netizens*, Chapter 13, p. 233]

In order to consider the impact of Michael's work and of the publication of the book, both in its online form and in the print edition, I want to look at some of the implications of what has been written since about netizens.

II. – Mark Poster on the Implications of the Concept of Netizen

One interesting example is in a book on the impact of the Internet and globalization by Mark Poster, a media theorist. The book, *Information Please,* was published in 2006. While Poster doesn't make any explicit reference to the book *Netizens* he finds the concept he has seen used online to be an important one. He offers some theoretical discussion on the use

of the "netizen" concept.

Referring to the concept of citizen, Poster is interested in the relationship of the citizen to government, and in the empowering of the citizen to be able to affect the actions of his or her government. He considers the "Declaration of the Rights of the Man and the Citizen" a monument from the French Revolution of 1789. He explains that the idea of the Rights of Man was one effort to empower people to deal with governments. But this was not adequate and the concept of the rights of the citizen, he proposes, was an important addition.

"Human rights and citizenship," he writes, "are tied together and reinforce each other in the battle against the ruling classes." [*Information Please*, p. 68] He proposes that "these rights are ensured by their inscription in constitutions that found governments and they persist in their association with those governments as the ground of political authority."[Ibid., p. 68]

But with the coming of what he calls the age of globalization, Poster wonders if the concept 'citizen' can continue to signify democracy. He wonders if the concept is up to the task.

"The conditions of globalization and networked media," he writes, present a new situation "in which the human is recast and along with it the citizen." [Ibid., p. 70] "The deepening of globalization processes strips the citizen of power," he writes. "As economic processes become globalized, the nation-state loses its ability to protect its population. The citizen thereby loses her ability to elect leaders who effectively pursue her interests." [Ibid., p. 71]

In this situation, "the figure of the citizen is placed in a defensive position." [Ibid.] There is a need, however, to find instead of a defensive position, an offensive one.

Also he is interested in the media and its role in this new paradigm. "We need to examine the role of the media in globalizing practices that construct new subjects," Poster writes. "We need especially to examine those media that cross national boundaries and to inquire if they form or may form the basis for a new set of political relations." [Ibid., p. 77]

In this context, for the new media, "the important questions, rather are these," he proposes: "Can the new media promote the construction of new political forms not tied to historical, territorial powers? What are the characteristics of new media that promote new political relations and new political subjects? How can these be furthered or enhanced by political action?" [Ibid., p. 78]

"In contrast to the citizen of the nation," he notices that the name often given to the political subject constituted on the Net is "netizen." While Poster makes it seem that the consciousness among some online of themselves as "netizens" just appeared online spontaneously, this is not accurate.

Before Michael's work, netizen as a concept was rarely if ever referred to. The paper "The Net and Netizens" introduced and developed the concept of "netizen." This paper was widely circulated online. Gradually the use of the concept of netizen became increasingly common. Michael's work was a process of doing research online, summarizing the research, analyzing it and then putting the research back online, and of people embracing it. This was the process by which the foundation for the concept of "netizen" was established.

Considering this background, the observations that Poster makes of how the concept of "netizen" is used online represents a recognition of the significant role for the netizen in the future development of the body politic. "The netizen," Poster writes, "might be the formative figure in a new kind of political relation, one that shares allegiance to the nation with allegiance to the Net and to the planetary political spaces it inaugurates." [Ibid., p. 78]

This new phenomena, Poster concludes, "will likely change the relation of forces around the globe. In such an eventuality, the figure of the netizen might serve as a critical concept in the politics of democratization." [Ibid., p. 83]

III. – The Era of the Netizen

While Poster characterizes our period as the age of globalization, I want to offer a different view. I want to propose that we are in an era demarcated by the creation of the Internet and the emergence of the netizen. A more accurate characterization of this period is as the "Era of the Netizen."

The years since the publication of the book *Netizens* have been marked by many interesting developments that have been made possible by the growth and development of the Internet and the spread of netizens around the world. I don't have the time to go into these today but I will refer to a few examples to give a flavor of the kind of developments I am referring to.

An article by Vinay Kamat in the Reader's

Opinion section of the *Times of India* referred to something I had written. Quoting my article, the *Times of India* article said, "Not only is the Internet a laboratory for democracy, but the scale of participation and contribution is unprecedented. Online discussion makes it possible for netizens to become active individuals and group actors in social and public affairs. The Internet makes it possible for netizens to speak out independently of institutions or officials." [See "We are looking at the 5th Estate," by Vinay Kamat, Reader's Opinion, *Times of India*, December 16, 2011, p. 2. http://timesofindia.indiatimes.com/home/opinion/editpage/We-are-looking-at-the-fifth-estate/opinions/11133662.cms The quote is taken from, "The Rise of Netizen Democracy: A Case Study of Netizens' Impact on Democracy in South Korea," by Ronda Hauben, online at: http://www.columbia.edu/~rh120/other/misc/korean-democracy.txt]

Kamat points to the growing number of netizens in China and India and the large proportion of the population in South Korea who are connected to the Internet. "Will it evolve into a fifth estate?" the article asks, contrasting netizens' discussion online with the power of the 4th estate, i.e., the mainstream media.

"Will social and political discussion in social media grow into deliberation?" asks Kamat. "Will opinions expressed be merely 'rabble rousing' or will they be 'reflective' instead of 'impulsive'?"

One must recognize, the article explains, the new situation online and the fact that it is important to understand the nature of this new media and not merely look at it through the lens of the old media. What is the nature of this new media and how does it differ from the old? This is an important area for further research and discussion.

IV. – Looking for a Model

While I was in South Korea in 2008, a friend asked if there is a model for democracy that could be helpful for South Korea – like in some country perhaps in Scandinavia. Thinking about the question I realized it was more complex than it seemed on the surface.

I realized that one cannot take a model from the period before the Internet, from before the emergence of the netizen. It is instead necessary that models for a more democratic society or nation in our times be models that include netizen participation in the society. Both South Korea and China are places where the role of netizens is important in building more democratic structures for the society. South Korea appears to be the most advanced in grassroots efforts to create examples of netizen forms for a more participatory decision making process.[1] But China is also a place where there are significant developments because of the Internet and netizens.[2]

In China there have been a large number of issues that netizens have taken up online which have then had an impact on the mainstream media and where the online discussion has helped to bring about a change in government policy.

In looking for other models to learn from, however, I also realized that there is another relevant area of development. This is the actual process of building the Net, a prototype which is helpful to consider when seeking to understand the nature and particularity of the evolving new models for development and participation represented in the Era of the Netizen.

V. – Nerves of Government

In his article comparing the impact of the Net with the important impact the printing press had on society, Michael wrote: "The Net has opened a channel for talking to the whole world to an even wider set of people than did printed books." [*Netizens*, Chapter 16, p. 299]

I want to focus a bit on the significance of this characteristic, on the notion that the Net has opened a communication channel available to a wide set of people.

In his study of the Net and netizens, Michael recognized that something new was emerging. In trying to understand what impact the Net was having and would have on society, he also kept in mind that the technical processes of building the Net were important.

In order to have a conceptual framework to understand what these technical processes are, I recommend the book by Karl Deutsch titled, *The Nerves of Government*.

In the preface to his book, Deutsch writes: "This book suggests that it might be preferable to look upon government somewhat less as a problem of power and somewhat more as a problem of steering; and it tries to show that steering is decisively a matter of communication." [*Nerves of Government*, p. xxvii]

I want to propose that to look at the question of government not as a problem of power, or of democracy, but as one of steering, of communication, would be a fundamental paradigm shift.

What is the difference?

Power has to do with force, with the ability to exert force on something so as to affect its direction and action. Democracy has to do with the participation and effect of people on the decisions made for society. Steering and communication, however, are related to the process of the transmission of a signal through a channel. The communication process is one related to whether a signal is transmitted in a manner that distorts the signal or whether it is possible to transmit the signal accurately. The communication process and the steering that it makes possible through feedback mechanisms are an underlying framework to consider in seeking to understand what Deutsch calls the "Nerves of Government."

According to Deutsch, a nation can be looked at as a self steering communication system of a certain kind and the messages that are used to steer it are transmitted by certain channels.

I want to propose that some of the important challenges of our times relate to the need for exposure of the distortions of the information being spread. For example, the misrepresentations by the mainstream media about what is happening in Libya and Syria.[3] The creation and dissemination of channels of communication that make possible "the essential two way flow of information" are essential for the functioning of an autonomous learning organization, which is the form Deutsch proposes for a well functioning system.

To look at this phenomenon in a more practical way, I want to offer some considerations raised in a speech given to honor a Philippine librarian. The speech was given by Zosio Lee. Lee refers to the kind of information that is transmitted as essential to the well being of a society. In considering the impact of netizens and the form of information that is being transmitted, Lee asks the question, "How do we detect if we are being manipulated or deceived?" ["Truthfulness and the Information Revolution" *JPL* 31 (2011), p. 105]

The importance of this question, he explains, is that, "We would not have survived for so long if all the information we needed to make valid judgments were all false or unreliable." [Ibid.] Also, he proposes that "information has to be processed and discussed for it to acquire full meaning and significance." [Ibid., p. 106]

"When information is free, available and truthful, we are better able to make appropriate judgments, including whether existing governments fulfill their mandate to govern for the benefit of the people," Lee writes. [Ibid., p. 108]

In his article "The Computer as a Democratizer" Michael similarly explores the need for accurate information about how government is functioning. He writes,"Without information being available to them, the people may elect candidates as bad as or worse than the incumbents. Therefore there is a need to prevent government from censoring the information available to people." [*Netizens*, Chapter 18, p. 316]

Michael adds that, "The public needs accurate information as to how their representatives are fulfilling their role. Once these representatives have abused their power, the principles established by Paine and Mill require that the public have the ability to replace the abusers." [Ibid., p. 317]

Channels of accurate communication are critical in order to share the information needed to determine the nature of one's government.[4]

While in general I have focused on the implications of the concept of Netizen that have emerged in the decade and a half since the publication of the print edition of the book, it is also important to realize that not everyone is friendly to the concept of Netizen. An article in the online newsfeed section of *Time* magazine proposed that the word netizen should be banished from the media.

Katy Steinmetz, who does an online column for *Time* claimed, "The word has been around for almost three decades [sic – it was less than two decades], but the likes of the *Los Angeles Times* were using it as recently as last month. Perhaps it's time to give it a rest … ."

In the same article, she proposed to banish "occupy" and "#[hashtag]." [See "Poll: What Words Should Be Banished in 2012? NewsFeed Time.com," *Time* magazine, January 11, 2012. http://newsfeed.time.com/2012/01/18/Wednesday-words-readers-choice-for-banished-word-of-2012-and-more/]

The following week she acknowledges that there is very little sentiment to ban the word netizen.[5]

VI. – Conclusion

In conclusion, I want to point to an article in a blog at the Foreign Policy Association website which has the title: "Institutions And New World 'Netizens': Act 1"

The author, Oliver Barrett, reminds his readers of a quote from Mohandas Gandhi: "First They Ignore You – Then They Ridicule You – Then They Fight You – Then You Win."

Barrett asks, "Will technology fundamentally change the relationship between the nation state and citizens?" He asks if net-connected citizens are "a threat or opportunity for government?"

In response to this question, he writes, "But I am not convinced that government officials, even in industrialized countries, are cognizant of how technological innovations like social media have forever robbed them of their positions as trusted sources of timely and legitimate information … . I dare say that netizens have started to short-circuit the politico-corporate communications wiring, raising the political and social justice consciousness of the hyper-connected citizen in a way that might not be in the interest of the governing classes."

"How will governments respond to this situation?" he asks.[6]

"I look forward to witnessing how Act 2 of Revolution 2.0 will unfold," he concludes.

Barrett focuses on the opinions of those in government. Instead, I propose that the important challenge is for netizens. Netizens need to understand the conceptual nature of the information and communication changes represented by the Era of the Netizen so they will be able to successfully meet the new challenges these represent for our society.[7]

Notes

1. In South Korea there are many interesting examples of new organizational forms or events created by netizens. For example NOSAMO combined the model of an online fan club and offline gathering of supporters who worked to get Roh Moo-hyun elected as President in South Korea in 2002. Also, OhmyNews, an online newspaper, helped to make the election of Roh Moo-hyun possoible in 2002.

Science mailing lists and discussion networks contributed to by netizens helped to expose the fraudulent scientific work of la leading South Korean scientist.

In 2008 there were 106 days of candlelight demonstrations contributed to by people online and off to protest the South Korean government's adoption of a weakened set of regulations about the import of poorly inspected U.S. beef into South Korea. The debate on June 10-11 over the form the demonstration should take involved both online and offline discussion and demonstrated the generative nature of serious communication. See for example, Ronda Hauben, "On Grassroots Journalism and Participatory Democracy."
http://www.columbia.edu/~rh120/other/netizens_draft.pdf.

2. Some examples include the anti-CNN website that was set up to counter the inaccurate press reports in the western media about the 2008 riot in Tibet, the murder case of a Chinese waitress who killed a Communist Party official in self defense, the case of the Chongqing Nail House and the online discussion about the issues involved. See for example, Ronda Hauben, "China in the Era of the Netizen." http://blogs.taz.de/netizenblog/2010/02/14/china_in_the_era_of_the_netizen/.

3. See for example "Libya, the UN and Netizen Journalism," The *Amateur Computerist*, Vol. 21, No. 1, Winter 2012.
http://www.ais.org/~jrh/acn/ACn21-1.pdf.
Jay Hauben, "On the 15th Anniversary of Netizens: Netizens Expose Distortions and Fabrications": http://www.columbia.edu/~hauben/Book_Anniversary/presentation_2.doc.

4. As Michael Hauben explains, "Thomas Paine, in The Rights of Man, describes a fundamental principle of democracy. Paine writes, 'that the right of altering the government was a national right, and not a right of the government'." (*Netizens*, Chapter 18, p. 316)

5. Katy Steinmetz, "Wednesdays Words: Readers' Choice for Banned Words of 2012 and More," *Time* Newsfeed, January 18, 2012. http://newsfeed.time.com/2012/01/18/wednesday-words-readers-choice-for-banished-word-of-2012-and-more/.

6. "Will the officials that govern the modern nation state engage their respective societies in meaningful ways, or will they continue to hide their heads in the sand? From what I've learned from history and the very erudite Mohandas Gandhi – I think I know the answer." Oliver Barrett http://foreignpolicyblogs.com/2012/01/12/institutions-and-new-world-netizens-act-1/ (4/25/2012).

7. See for example: Ronda Hauben, "The Internet Model of Socio-Economic Development and the Emergence of the Netizen." http://blogs.taz.de/netizenblog/2010/11/02/the_internet_model_of_socio-economic_development_and_the_emergence_of_the_netizen/ and Ronda Hauben, "In Cheonan Dispute UN Security Council Acts in Accord with UN Charter" http://blogs.taz.de/netizenblog/2010/09/05/in_cheonan_dispute_un_security_council_discovers_un_charter/.

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[Editor's Note: The following is a slightly edited version of a paper submitted on January 23, 1999 to the "Workshop on Membership Issues for ICANN" sponsored by the Berkman Center for Internet & Society at Harvard Law School. It can be seen online at: https://cyber.harvard.edu/rcs/hauben.html and at: http://www.ais.org/~ronda/new.papers/internet.txt.]

The Internet: A New Communication Paradigm

by Ronda Hauben

"… the systems being build must remain flexible and open-ended throughout the process of development, which is evolutionary."

J.C.R. Licklider and Robert Taylor
The Computer as a Communication Device

"Computers need a language of their own to communicate with each other and with their users."

Robert Kahn Proceedings of IEEE
Special Issue on Packet Communication Networks

"Experience has shown the importance of making the response time short and the conversation free and easy."

J.C.R. Licklider and Robert Taylor
The Computer as a Communication Device

I. – Can the Human-Computer Partnership Improve Communication

"In a few years, men will be able to communicate more effectively through a machine than face to face," write J.C.R. Licklider and Robert Taylor in their 1968 article, "The Computer as a Communication Device."[1]

In a memo written several years earlier, Licklider raises a related question: How do you state the fundamental problem concerning communication? "At the extreme," he writes, "the problem is essentially the one discussed by science fiction writers: how do you get communication started among totally uncorrelated sapient beings?"[2]

In the same memo, Licklider also poses the question: If you are gathering together different groups of people using different computers and different programming languages, isn't it necessary to find the primary question that has to be asked? All the different computer systems have to either agree to speak the same language, or at least agree to some convention for asking this fundamental question: "What language do you speak?"

Licklider was writing in the 1960s during the earliest days of the efforts to link together computers to facilitate resource sharing. The questions he raises are questions about the fundamental nature of communication. Has the development of computer networking in the past 30 years shed any light on the fundamental nature of communication? This is the question that this paper will endeavor to answer.

II. – Different Networks – Diverse Views – Broad Ranging Discussion

A discussion carried out on USENET in several newsgroups before Thanksgiving of 1998, is a helpful example of the new kind of online discussion that the wide ranging reach of the Internet as a network of networks makes possible. A number of people from the U.S. and Europe participated in the discussion. An examination of this discussion I hope will shed light on two questions: [1] How the Internet impacts human to human communication? and [2] How can the communication made possible by the Internet help with particular problems that arise in the continued development of the Internet?[3]

The discussion began on November 18, 1998 with a comment that I made in a thread on several newsgroups about "Realizing the promise of computers." I responded to a post by John Adams who had been reading Bell Labs publications from the mid 1960s and was struck by the "failure of current business information systems to realize many of the envisioned goals."

My response supported Adams' statement that we haven't met the goals of the 1960s: "And we have lost Bell Labs as well."

In response, came a post from Dennis Ritchie, the co-inventor of Unix, created in 1969 at Bell Labs.[4] Ritchie posted:

Ronda Hauben wrote:

> And we have lost Bell Labs as well.

(Pinches oneself). No, still alive.

Dennis

A few other commentators supported what Ritchie had said.

Then another person responded to those who supported Ritchie's view that Bell Labs still existed. Arthur T. Murray/Mentifex wrote:

> No, Dave Farber isn't worried; Esther Dyson isn't worried.
>
> The drunks on the barstools are not worried, nor are the computer complacent who poke fun at Ronda Hauben's minor gaffes.
>
> But a hundred and some nations around the world who are about to get disenfranchised from the once free Internet must be a little worried by now, judging from the recent telecommunications meeting at which they tried to resist the U.S. govt. privatization.
>
> Oh, excuse me (Arthur T. Murray/Mentifex), I used a Ronda-ism in the form of "govt." for government! In her noble fight on behalf of "liberte' egalite' fraternite'" and all those other trifles which probably nauseate you and move you to deride her, Ronda Hauben mangles the English language and lets you have your fun.
>
> But Ronda Hauben is not a gutless, spineless, complacent wimp.

Dennis Ritchie responded that he had just heard Nobel prize winners from Lucent giving talks there. Another poster wrote, "Do you know that Dennis Ritchie invented C, don't you? Oh good."

A subsequent post complained that Arthur Murray was flaming and remarked that Ronda Hauben should choose her allies more carefully.

One of the responses was "I am quite impressed with Mr. Ritchie's accomplishments, but science doesn't accept arguments of authority for good reason."

The person continued:

> Everybody makes mistakes sometimes. Einstein arguably did with the Cosmological Constant, Pauling did with both vitamin C as well as publishing a proposed structure for DNA which met all available X-ray crystallographic requirements but wasn't an acid.
>
> In my view, Ritchie is being absurdly complacent, even arrogant in proposing that all is well because he is comfortable.
>
> Nobel prizes are like 'Man of the Year.' They are awarded anyway and the fact that a bunch of Lucent employees may have won them if anything indicates that there isn't as much competition as there should be. … Lucent doesn't have anywhere near the funding or commitment that its predecessors had in the 1950s and 1960s, and to claim otherwise is absurd. The very fact that it was spun off should serve as evidence of that.
>
> The fact is that basic, fundamental research in America is in the doldrums, and the ignorant, opportunistic attitudes of most top managers (such as Bill Gates) will keep it there for the foreseeable future unless people bring pressure to change those attitudes.

Several other posts continued the discussion, and Ritchie explained the current situation at Lucent, ending his post:

> I won't dispute a general argument that the 'average' research here is somewhat less fundamental than in the past nor that the emphasis has shifted somewhat away from physics and toward software, but the population count and the budget have been remarkably stable.[5]

The discussion moved on to the subject of how "fundamental research in America is in the doldrums."

Another post asked:

> *ahem* However, where the lack of research fits in with the decision to privatize the Internet naming authority in the U.S. is a different issue entirely. As I understand it, the issue is whether or not you can afford to have something as important and central as that working in commercial conditions.

In response to the question of what to do about the lack of basic research in the U.S., another poster commented, "And where should the people's pressure be directed? Toward influencing senior, executive management in private industry or toward espousal of more government funding?"

Continuing the discussion of the value of basic research, a post explained:

> Nearly all research funding is now coupled tightly to patents and short term profits, while visionary products without immedi-

> ate applicability go begging. The inherent value of understanding and human knowledge is less and less appreciated. We have all but forgotten Franklin's reply to a question about the utility of some new invention: "What good is a newborn baby?"

The discussion then turned to whether or not Microsoft spent money on basic research. And whether a company could afford to spend money on basic research if they didn't get any gain as a result. In response, Tom Harrington wrote:

> Let me adapt a quote from Benjamin Franklin that John Adams quoted elsewhere in this thread: Why do we bother paying for elementary school? Think about it. There's no payoff for literally years after the money is spent. And a good chunk of it is likely wasted on children who will grow up never to contribute to society anyway. And those who do grow up and help to improve the world do so in unpredictable ways; there's no way of knowing what problems will be solved, or by who, when you're looking at the elementary school level. So, we could classify elementary school spending as going toward unpredictable, distant goals, and being spent in some unknown percentage on children who will never help anyway. Yet we continue to spend money educating small children.
>
> When you understand why we spend money on elementary schools, you may begin to understand why spending money on fundamental research is a good idea.

Another poster replied "Very well said!"

Another responded to the comment that a company didn't benefit from basic research by noting that "Plus, repeated studies have shown an average X35 fold return in 'worthless' research."

Another explained that Microsoft's "research" was "on par with 'buying patents' not to implement, but to prevent implementation." Another added that "Massive economic development tends to help everyone in cases like that. I would bet the benefits over time to AT&T from the development of the transistor far outweigh the research costs. So what if Intel gets some too."

The thread went on to consider the short term outlook of a business plan, and other connected issues. Another post noted that since AT&T was regulated during the period when the transistor was invented, "it was sort of like doing it with tax dollars." Still another poster had in his signature "Behind every successful organization stands one person who knows the secret of how to keep the managers away from anything truly important."

The people posting were from several countries including Canada, Austria, Britain, the U.S., Norway, and Australia. They included people from different backgrounds and positions, including a government site, university sites, corporate sites, etc. I have referred to this discussion because it shows the broad ranging set of views that the Internet makes possible as all these people can communicate as part of one Internet. And it shows the open forum that USENET provides for such a discussion.

The discussion through its broad ranging set of posts clarified a fundamental question in the battle over the U.S. government decision to privatize the central functions of the Internet. That question was identified as "As I understand it, the issue is whether or not you can afford to have something as important and central as that working in commercial conditions." And the conclusion of those who were part of the discussion was that commercial conditions are very shortsighted and thus not able to provide for the long term technological development that benefits a society in the same way as providing elementary schooling for all its citizens benefits the society. Furthermore, the question was raised that when someone understands why elementary schooling for all its citizens is an important public policy provision, they will then understand the need for providing for basic research funding.

In this context, the issue of whether one can trust something as important as control over the Internet to something that is functioning under commercial conditions and business plans is answered in the negative.

The interconnection of networks from around the world welcomes diverse viewpoints by removing the constraints on communication. People from many different networks can communicate with each other and contribute. In this discussion, there were people from at least six different countries, and multiple networks within a few of the countries represented. The Internet provides the environment and varied viewpoints that not only help to frame the real question in a problem like the battle over the U.S. privatization of essential functions of the Internet, but which also provides the means to examine the issues so as to

determine a conclusion or to come to a decision about what will be in the best interests of the Internet.

How has such an environment been created? What are the elements of the Internet that contributed to making this environment possible?

III. – How has the Internet developed?

From the time of the publication of Licklider and Taylor's article in 1968, to the present time, there have been significant changes in the nature and potential of packet switching networks. These changes make possible a new kind of cooperative communication among individuals and groups of individuals. This is a communication process which involves users and their computers. It is also facilitated by the internetwork system that those online are part of. However, this internetwork system is not transparent. It is essentially hidden from the view of the user. Thus it is harder to understand how it helps to make communication possible. However, reviewing the history of the development of the Internet can provide an understanding of how the Internet helps to make an important new form of communication possible.

First, I will review a bit of the history of how the Internet has developed from the events that followed the publication of the paper by Licklider and Taylor in 1968. Then I will explore how the unique characteristics of the Internet make possible a new communication paradigm. This paradigm, it can be argued, is crucial for solving the modern problems of scaling the Internet and managing its essential functions. Secondarily, understanding this paradigm can help government with the decisions that need to be made in problems like the management of the central functions of the Internet.

On December 23, 1968, a Cambridge based engineering firm, Bolt Beranek and Newman, Inc. (BBN) was notified that it was to be awarded the contract to build the Interface Message Processor (IMP) minicomputer subnetwork that would provide the packet switching backbone for a prototype packet switching network. The public funding for this research was provided through the Information Processing Technologies Office (IPTO) of the Advanced Research Projects Agency (ARPA) of the U.S. Department of Defense. This packet switching network came to be known as the ARPANet. Those working at BBN as part of the ARPANet systems team included Frank Heart, Severo Ornstein, Robert Kahn, Will Crowther, Dave Walden, Bill Barker, Jim Geisman, Martin Thrope, Truett Trach and Bernie Cosell. They worked to design, plan, build, install, operate and test the IMP subnetwork. Time-sharing host computers at selected university or computer research contractor sites were to connect to it and thereby to be able to communicate with each other.

Along with the need for the programmers (many of whom were graduate students) to connect the time-sharing systems at their sites to the IMP subnetwork, was the need for the hosts sites to develop a means of communication among the different hosts. This required that the programmers create a convention that they agreed upon and that they would be able to add to the operating systems of the computers at their sites. Such a convention for interconnecting is called a communications protocol. With support from Larry Roberts who directed the ARPANet project at ARPA during this early period and others working with ARPA or BBN, the programmers created the Network Control Protocol, also known as NCP. They met together at different sites, as the network in these early days did not yet provide the means for the communication to occur online. These programmers from the diverse early sites called themselves the Network Working Group (NWG). The protocol they created was developed through a process of open discussion, where contributions were encouraged from all. As part of this process, they produced written notes documenting their activity. They called these notes Requests for Comment or RFC's. During the earliest period of the activity of the NWG, RFC's were circulated by mail. However, once it was possible to circulate them and even maintain them online, the functioning network itself helped to create an open process to conduct the discussion. One of the earliest RFC's, RFC 3, dated April 1969, explains this open process for discussion and problem solving that grew up with the ARPANet. RFC 3 was by Steve Crocker who was from the UCLA ARPANet site. Crocker writes:[6]

> Documentation of the NWG's effort is through notes such as this. Notes may be produced at any site by anybody and included in this series … . The content of a NWG note may be any thought, suggestion, etc., related to the HOST software or other aspect of the network. Notes are encouraged to be timely rather than polished. Philosophical positions without examples or other specifics, specific suggestions or implementations techniques

> without introductory or background explication, and explicit questions without any attempted answers are all acceptable. The minimum length for a NWG note is one sentence.
>
> These standards (or lack of them) are stated explicitly for two reasons. First, there is a tendency to view a written statement as 'ipso facto' authoritative, and we hope to promote the exchange and discussion of considerably less than authoritative ideas. Second, there is a natural hesitancy to publish something unpolished and we hope to ease this inhibition.

This kind of open set of notes helped to create a process of exploring a problem and welcoming contributions toward solving it.

The ARPANet network successfully demonstrated the benefits of using packet switching to transport messages among incompatible computers and incompatible operating systems. In the introduction to the special issue he edited of the "Proceedings of the IEEE," "On Packet Communication Networks," Robert Kahn writes:[7]

> Packet switching is a particular form of digital telecommunications that is well suited to the unique nature of computer-based communications … . Computer traffic occurs sporadically; it is often described as being 'bursty,' of low duty cycle, since the intervals between short segments of transmitted data are relatively long. A packet-communication network designed to be quite efficient in transmitting bursty traffic, can provide other functions that are critical for computer communications, such as error-free delivery, and code and speed conversion to facilitate communication between otherwise incompatible terminals ….
>
> In summary, packet-switched networks are extensions of the very nature of computers and computing, offering the same precise effective means of transporting information that computers offer in the processing of information.

Kahn, working with Severo Ornstein, and others at BBN, wrote the "Initial Design for Interface Message Processors for the ARPA Computer Network," as the proposal that BBN submitted to ARPA. Kahn also prepared BBN Report 1822, "Specifications for the Interconnection of a Host and an IMP." He participated in some of the Network Working Group meetings, and was on the distribution list of the earliest RFCs. Another important contribution Kahn made to these early developments was the demonstration he and Al Vezza of MIT organized showing the utility of packet switching networks. This was held at the International Computer Communication Conference in October, 1972 in Washington, D. C. Leonard Kleinrock, another of the important networking pioneers, describes that demonstration:[8]

> DARPA installed an IMP in a hotel in Washington, D.C. and ran in some lines. Everybody was encouraged to create some demonstration packages, and we did as well. That caused lots of good things to happen in the ARPA network. It generated lots of new uses of the ARPA network just for that demo. One of the things that was demonstrated there was a distributed air traffic control system. The idea was there would be a bunch of computers in the network that would be simulating air traffic control operation in their physical region. For example, MIT would be doing Boston, and some Washington machines would do Washington and so on in different regions.

Kleinrock describes other uses of the network that were demonstrated at that event:[9]

> I remember one of the demos was really interesting. In this demo, you could sit down in Washington at a teletype, log on to a machine at BBN, pull up some source code, ship it over to a machine at UCLA across the country, compile and execute, and bring back the results to be printed on the teletype right next to you in Washington.

He remembers the important impact that the demonstration had:[10] "But the point is it was a great demo. People were pulled out of the hallway, handed a handbook, and told, 'Sit down, we'll help you use the ARPANet,' and they could … . The main purpose was to prove networking."

Kahn left BBN in November 1972, just after the successful demonstration, and went to work at DARPA. There he took over the satellite packet network project that Larry Roberts had started and began a packet radio network project.[11]

Kahn wanted to find a way to create a ground

based packet radio network and he realized that it would have to have access to resources that would make it of interest to use. He also planned to create a satellite packet network, which would also need to be able to access resources to make it worth using. If these could be connected to the ARPANet, they would be able to access the growing number of interesting resources available on the ARPANet. Thinking through the problems represented by these different kinds of packet networks, and particularly recognizing the differences between the assumptions of the ARPANet packet network and the requirements of a packet radio network, he realized that there was a need for a more general protocol than the one being used on the ARPANet. The new protocol would have to accommodate different kinds of networks rather than accepting the particular assumptions that guided the creation of the ARPANet protocol.

In spring of 1973, Kahn invited one of the members of the NWG, Vint Cerf, to work with him on the creation of a new protocol to make possible the interconnection of networks.

"Around this time," Vint Cerf notes, "Bob started saying, 'Look, my problem is how can I get a computer that's on a satellite net and a computer on a radio net and a computer on the ARPANet to communicate uniformly with each other without realizing what's going on in between?'"[12]

Recognizing that a computer that would serve as a gateway to the diverse networks would solve their problem, Cerf explains: "We knew we couldn't change any of the packet nets themselves … . They did whatever they did because they were optimized for that environment."[13]

"Our thought," he continues, "was that, clearly, each gateway had to know how to talk to each network that it was connected to … . Say you're connecting the packet-radio net with the ARPANet. The gateway machine has software in it that makes it look like a host to the ARPANet IMPs. But it also looks like a host on the packet-radio-networks."[14]

Since all the networks had different characteristics, how could messages be transported across them despite these differences?

Other important issues like the problem of how reliability of the transmission of messages would be established had to be determined. These issues were also being considered by others who were part of the International Network Working Group that had formed at the ICCC72 meeting in Washington, in October 1972. Work was being done on these related questions by others in the group, like Louis Pouzin in France who was developing a packet switching network called Cyclades.

By September 1973, Kahn and Cerf had worked out the design for the new protocol that solved the problems they had identified. They presented it to the International Network Working Group (INWG) which was meeting in Brighton, England at the University of Sussex. In November 1973, Kahn and Cerf wrote the paper, "A Protocol for Packet Network Intercommunication," and submitted it for publication. The paper was published in the *IEEE Transactions on Communications* in the May 1974 issue.[15]

The paper describes the principles for the new protocol and presents its essential aspects. Cerf and Kahn write:[16] "A typical packet switching network includes a transportation mechanism for delivering data between computers or between computers and terminals. To make data meaningful, computers and terminals share a common protocol (i.e., a set of agreed upon conventions). However these protocols have addressed only the problem of communication on the same network."

The paper describes the new set of issues that had to be considered when creating a protocol that would make it possible to have communication across diverse packet switching networks. "Even though many different and complex problems must be solved in the design of an individual packet network," Cerf and Kahn write, "these problems are manifestly compounded when dissimilar networks are interconnected."[17]

"Issues arise," they continue, "which have no direct counterpart in an individual network and which strongly influence the way in which internetwork communication can take place."[18] They introduce the concept "internetwork" and they recognize the difficulties that have to be resolved to accomplish not only connection between two networks, but an internetwork communication that would allow any and all diverse packet switching networks to be connected and to provide the ability to have computers and users communicate with each other.

Their seminal paper outlines a number of ways that packet switching networks may differ, and considers alternative ways to interface the diverse networks.[19]

Most importantly, the authors propose that the preferable solution will be to develop a common protocol that can be used in the different networks that

agree to communicate.[20] They minimize the role that will be played by the gateway computer which will provide the interface between two different networks. Recognizing that they will be providing a means for networks "under different ownership to interconnect," they emphasize that "the interconnection must preserve intact the internal operation of each individual network."[21]

The link that will connect two different networks, they call a black box or a gateway. "We give a special name to this interface that performs these functions and call it a gateway," they explain. They assign to the gateway the function of properly routing data.

They call their new protocol Transport Control Protocol (TCP). With the architecture and protocol design described in their paper, they solve the design and other related problems of building an Internet of different packet switching networks.

The significance of their achievement is that they created a means for communication across diverse and different packet switching networks. They, thereby, increased the number of different computers and different operating systems and most importantly of different people who could communicate. Thus they identified the principle which would make possible communication across the boundaries of different packet switching networks. This principle was to provide for the autonomy of the networks that joined together.

The important aspect of TCP was to remove constraints to communication among diverse and different networks, and it has succeeded in a fundamental and important way.

Kahn and Cerf with the help of a number of others, went on to develop the implementations for TCP for a packet radio network, a packet satellite network and to connect them all up with the ARPANet, demonstrating that they worked.[22] The networks were hooked up in 1975 and worked. Kahn says that he cannot remember the exact day nor whether the packet radio network or packet satellite network was first hooked up to the ARPANet. "It should be like V-Day," he notes, but recalls, "When I was doing this, no one else cared. It wasn't viewed as that big a deal." A demonstration of the tri-network occurred on November 2, 1977, connecting up a moving van with a packet radio terminal sending packets into the ARPANet's land lines and then via satellite to Norway and to University College in London. The packets returned via the Atlantic packet satellite network to West Virginia, then to the ARPANet and then to Machine C at UCLA's Information Sciences Institute (ISI). Cerf explains that "The packets took a 150,000-km round trip to go 650 km down the coast from San Francisco to Los Angeles," Cerf recalled. "We didn't lose a bit."[23]

Then on January 1, 1983, there was a cutover from the earlier ARPANet protocol NCP to TCP/IP on the ARPANet.[24] And by Fall 1983, the ARPANet was split into two different networks connected by TCP/IP, into MILNET, an operational network for use by the Department of Defense, and into the ARPANet, a research and scientifically oriented network that was functioning in an open environment. This was an operational Internet, each different networks in their own right, and yet also interconnected.

I have provided this brief account of the earliest development of the Internet protocol TCP because it is the development and implementation of TCP (now called TCP/IP) which, as Dave Clark, another Internet pioneer noted, is the glue connecting diverse networks and diverse technologies; I would add, that it is also the glue connecting diverse computers, diverse operating systems, diverse programs, and diverse people into a functioning and unprecedented human-computer communications system that spans the globe.[25] This is the Internet which makes possible the diversity of people from a diversity of networks who contribute to the broad ranging discussion that occurs in USENET newsgroups and on Internet mailing lists. And it is the principle of recognizing and providing for the autonomy of networks and subsequently the autonomy of peoples that makes a new form of communication possible among the people on the Internet.[26]

IV. – The Challenge of Internetting

In a mere 30 years we have come a long way from the important discussion of communication and decision-making made possible by human-computer time-sharing systems in the 1968 article by Licklider and Taylor. And it has taken an army of people, along with their generals, to design, develop, implement, and then test and spread the concepts and implementation of internetting. This is, in an important way, a process of removing the constraints to communication between diverse and different networks and, therefore, between diverse and different people from around the world. Robert Kahn explains that his view of the net is almost equivalent to the ether for speech, i.e., that it shouldn't put any constraints (so that) one could do with the

Internet, in essence, what one could do with voice.[27] The Internet, however, is far more powerful.

This leads to the question how to protect and preserve the Internet. The promise of the Internet is that it makes it possible for people to participate in interactive online communities where one can learn fundamental lessons about human to human communication in the process of communicating online. More importantly, the Internet can point the way toward solving the problems that are encountered as it continues to evolve and scale.

In their 1968 article, Licklider and Taylor write that they are deliberately putting their emphasis on people and on how people communicate and how they have observed that computer and time-sharing systems make possible human to human communication. They point out that they are not interested in just passing information from person to person via a computer. They don't consider that communication, but merely the passive transport of data. For them, communication has to do with the creative process by which something new and nontrivial emerges from the exchange of ideas.

"We believe," they write, "that communicators have to do something non trivial with the information they send and receive."[28]

The importance of their premise is that it provides a yardstick by which to measure whether indeed the human-computer internetworking system that has grown and developed over the past thirty years is making it possible for a more effective form of human communication to occur.[29]

Licklider and Taylor next examine how the process of two people communicating takes place. They propose that people have different models and it is only when they are willing to allow the dialogue to enable them to reexamine their models is communication actually taking place.

My study of online communication, and my experience online and in meeting people in person from online, however, leads me to propose that there is a different paradigm for identifying if communication has taken place. My research has included a number of different forms of early online communication.[30] Also I have discussed problems or concerns online or in person with people I have met online. What I've found is that it is through the free wheeling and rambling discussion that the online medium makes possible, that one can more thoughtfully consider diverse views. The Internet helps to remove the constraints to communication, to make it possible to explore what the underlying dispute or agreement is, and then to determine the new view that will resolve the issue in contention.

I am proposing that the broad ranging discussion made possible by the Internet provides an environment where such considerations can occur. This is possible between two people as in email. Also other formats such as USENET newsgroups or Internet mailing lists can provide an environment where people with a common interest, from a diverse collection of networks around the world, can participate in a discussion. This helps to generate the diversity of the variety of viewpoints that one has to consider to analyze a question or problem. In this process the wide ranging discussion made possible by the Internet is not limited to two communicators, but can include a large and almost unlimited number.[31]

Licklider and Taylor's article not only proposes how two individuals or groups of individuals communicate, but it also raises the issue of how communication affects government and government decision making. They explain that modern day governments are often confronted with a large amount of data to study and analyze. They propose that the modeling process they have outlined as how communication functions, is too expensive a task for governments to undertake and thus government decisions are often made prematurely. They describe how governments often make policy decisions, without adequate study of important data:[32] "It is frightening to realize how early and drastically one does simplify, how prematurely one does conclude, even when the stakes are high and when the transmission facilities and information resources are extraordinary."

They then propose that in the future the opposite may also be true. They predict: "But someday governments may not be able not to afford it."[33]

They explain that not only is a communication process a cooperative modeling effort in a mutual environment, there is also an aspect of necessary communication with or about an uncooperative opponent.[34] They write:[35] "As nearly as we can judge from reports of recent international crises, out of the hundreds of alternatives that confronted the decision makers at each decision point or ply in the "game," on the average only a few, and never more than a few dozen could be considered, and only a few branches of the game could be explored deeper than two or three such plies before action had to be taken. Each side was

busy trying to model what the other side might be up to – but modeling takes time, and the pressure of events forces simplifications even when it is dangerous."

Again the study I have done of the kinds of broad ranging discussion that the Internet makes possible leads me to propose that the problem is not modeling toward decision-making. Rather that it is to find a way to have the sufficiently broad ranging and often what seems like irrelevant discussion that will make possible a broadening of the question that is being discussed, so that it becomes possible to clearly identify the problem and then to determine the principles for the decision.

V. – Two Examples of the Old Communication Paradigms and the New Competing

An example of an important government decision that was made based on too limited communication and discussion of the implications will perhaps help to clarify how the old and new paradigms differ.

In the early 1990s, a decision was made by the U.S. government to privatize the NSF backbone to the U.S. section of the Internet. The decision, according to the multiple authors of "A Brief History of the Internet" was made in a series of NSF-initiated conferences at Harvard's Kennedy School of Government on "The Commercialization and Privatization of the Internet" – and on the "com-priv" mailing list on the net itself.[36] However, once the question was framed in this way, the decision was already made and both the discussion at the Kennedy School and on the com-priv list was restricted to how to carry out the privatization. Thus it provided no helpful perspective to either make or evaluate the decision. The problem with this process is that there is no welcoming of diverse views on the basic problem and no discussion allowed with those who disagree.

In contrast to the narrowly focused discussion on the com-priv mailing list and at the Kennedy School meetings, the National Telecommunications Information Administration (NTIA) sponsored an online discussion on the broader issues of how to affect the public policy goal of universal service, access for all and similar topics.[37] This online conference which was accessible via the Internet as a mailing list, and as newsgroups available on the Cleveland Freenet and other such community networks, led participants to identify the question of whether or not the privatization would facilitate access to the Internet for all to at least email, USENET newsgroups, and a text based browser. Out of the debate came the concern that it was incumbent on the U.S. government to determine that issue before carrying out an action that could deter ubiquitous access for a long period of time or which could cost a much greater amount of public funding than if the government ownership of the NSF backbone was retained to facilitate a less expensive way to provide this important public policy goal.

The NTIA online discussion did not have any obvious effect on the U.S. government decision to carry out the privatization. This was carried out by April 30, 1995. However, the result that those at the NTIA online conference predicted, that privatization put off achieving the goal of universal access for all to the Internet, has come to pass. Three years later only a small percentage of the households in the U.S. and mainly high income households, had access to the Internet, despite the fact that almost 50% of U.S. households had computers. And there have been estimates that it will cost billions of dollars to connect up certain public sector sections of the population to the Internet, without even considering whether this will further deter universal service and access for all goals that are crucial public policy objectives[38] Also those with access to the Internet are plagued by a slew of unwanted junk mail and junk posts on USENET newsgroups that is some of the byproduct of the privatization. This presents further obstacles to connection for purposes of communicating via the Internet. And this was one of the harmful effects of privatization predicted by those at the NTIA online conference.[39]

A similar situation occurred again in 1998. The U.S. government claimed that the longer term management of certain essential functions of the Internet is a problem that has to be solved. In a closed process, without the broad ranging kinds of discussion that the Internet makes possible, the U.S. government decided to create a private corporation to whom it would give important and invaluable public assets. These assets effectively give control over the Internet to whoever controls this private corporate entity.

The U.S. Executive Branch has been encountering opposition to its Internet privatization plan from some sectors of the Internet community. It has received very little support for its plan except from a very small sector and from some corporate entities in the U.S. and a few other organizations in the U.S. and abroad including the Internet Society. The U.S. Con-

gress has held hearings on the privatization process. The Chairman of the House Commerce Committee sent a letter to the Chairman of the U.S. Department of Commerce and to the policy advisor to the President of the United States asking for a number of documents toward beginning an investigation into the process.[40] In November, 1998, the National Telecommunication Information Administration (NTIA) signed a Memorandum of Understanding with the private sector corporation they created, ICANN (Internet Corporation for Assigned Names and Numbers) providing for a process to design and test a proposal for the new organization. However, most of the activities of the new organization were carried out in a secret way where the decisions being made only reflect a very narrow consideration of options.[41]

Though the NTIA invited public comments on several issues in this process, they have structured the questions and the process for commenting in a way that severely limited the range of discussion. For example, the discussion invited in March of 1998 about the Green paper plan for carrying out the privatization of key Internet functions limited the focus of the discussion and thus also of the range of opinions gathered.[42]

A mailing list called IFWP (International Forum on the White Paper) was set up to discuss how to carry out the privatization, much like the com-priv mailing list that helped to carry out the privatization of the NSF backbone to the Internet in the early 1990s. This mailing list, like the former one, encouraged discussion and support for the privatization, and in this way limits the range of discussion that is needed to determine how to even identify the problems that need to be solved.

Also the USENET discussion described in part II of this paper shows how the broad ranging kind of discussion that the Internet makes possible can clarify the essential question in a public policy issue.

VI. – The Challenge for Internetting and the Informational Public Utility

By solving the problem of how to make it possible for dissimilar networks to communicate, the Internet pioneers have removed the constraints to communication that the Internet makes possible in a way that is both significant and surprising. They have created a new ability to communicate for those who gain online access to the Internet and USENET. Such a communications advance was accomplished in part by identifying the requirement that had to be met, which was to not interfere with the autonomy of the different networks and yet to make it possible for all those who wanted to connect to be part of the Internet. The design of the protocol TCP by Robert Kahn and Vint Cerf and the work they did to implement it, along with the contributions of many others from around the world, is a very important and stupendous achievement. But the obligation to safeguard the autonomy of the networks that make up the Internet continues. The creation by the U.S. government of ICANN and its proposed role as a decision maker to set policy for the networks that make up the Internet is a very serious departure from the fundamental principle that makes the Internet possible.

The cooperative forms that have grown up as part of the development of the Internet, like the RFC process or the Internet Engineering Task Force and its cooperative procedures, make it possible to protect the autonomy of the diverse networks of the Internet.

Therefore, the same kind of cooperative online processes that have evolved to support the autonomy of the participating networks of the Internet, are still needed to continue the growth and development of the Internet today. Since the Internet makes a new form of communication possible, this communication can help to clarify the problems when they develop. Similarly, the Internet can be helpful in the search for the solutions. What is needed for problems like the one the U.S. government has supposedly created ICANN to solve, is to create or utilize forms that facilitate communication. However, instead of the recognition that this task is to improve communication between different networks and different people, a structure is being created to block communication and to mandate decisions. Instead of ICANN providing for the needed communication that will make it possible to solve problems, a private corporate structure is being created to constrain communication between the networks and people on the Internet so as to be able to impose decisions that have been created by unknown individuals and unknown processes and which are in the interests of a very small set of people.

However, there is a need to determine how to remove the constraints to communication between those administering the essential functions of the Internet, and the people from the diverse communities and diverse networks who are part of the Internet community. How this is to be done needs to be studied

and determined, but it involves study both of those administering the essential functions of the Internet and of the people and networks that make up the Internet community today. To create a better interface between these two entities, one must identify what the problem is and formulate it in the way that networking pioneers were able to clarify the problem of interconnecting diverse networks to create the Internet. Also there is a need to examine whether to create a USENET newsgroup or newsgroup hierarchy and to determine how it might be helpful to carry out the functions that are needed in assigning names and numbers for the Internet. In general and where possible, decisions should be made at a grassroots level by an open process involving those administering the technical function in discussion with the Internet community. This can only function if there is a structure that is open to all who want to participate from the myriad of networks in the Internet community and which can hear from others with concerns or problems about the decisions that are to be made or have been made. An online forum on USENET, where those administering the functions participate would help make it possible to bring up any problems, get help clarifying them, and have the discussion analyze the problems that have to be solved. However, for this to function, there must be a way to protect the process from those who are trying to gain commercial advantage from the decisions, at the expense of what is in the best interests of the whole Internet community.

Recognizing the social problems that would arise and need to be solved when the network of networks they were planning would be built, farsighted computer pioneers like J.C.R. Licklider and H. Sackman proposed the need to study and give proper attention to public policy issues for the developing computer utility.

At a conference on the Informational Public Utility, held in Chicago, in 1970, Harold Sackman, explained why the concept of a public utility was an appropriate concept for administering the network of networks that they foresaw would develop. He explains:[43]

> The concept of public utilities is as old as urban civilization. Recall the great irrigation works of Egypt and Mesopotamia, and the renowned highways and aqueducts of the Roman Empire. The concept of public utilities as we know them today emerged with the advent of the industrial revolution and western democracy. Many vital services were at first privately owned, such as transportation, communication, water supply, sanitation, power and light. The pressure of growing urbanization created greater needs for adequate utilities. Widespread abuses were uncovered under the protective umbrella of unrestricted monopolies for private owners, with cutthroat competition among such owners to obtain exclusive monopolies. At about 1840, a concerted revolt occurred at local governmental levels against the prevailing laissez faire doctrine in England and America. After many fits and starts, the modern concept of the public utility emerged – as a public service typically (but not always) managed by private enterprise under a franchise, and under explicit public regulation by duly constituted governmental authority.

Sackman goes on to describe the way that sound regulation needs to be developed, which is through a process of exploring what will be functional by setting up a prototype and examining how it meets the required needs. He proposed having some finite process of exploring whether a regulation would be helpful or would need to be revised to meet the problems that were encountered during the test case using it. Sackman noted that there wasn't at the time the necessary experience in developing such regulations, but he proposes the process needed to determine such regulations:[44] These considerations converge into a single, fundamental recommendation – the need for cooperative, experimental computer utility prototypes to formulate the problems, develop the techniques, and gain the experience necessary for intelligent regulation and growth of this new social force."

Sackman raises the question whether the public interest had to be considered – "not merely the interest of the computer industry, nor that of the communications carriers, nor that of governmental agencies, but the interest of all the people?"[45]

"It might be argued," he continues, "that dedication of computer utilities to free and enlightened knowledge in the public domain could lead to a wiser and more enlightened citizenry, and to a higher standard of living for all through the release of latent effective intelligence. It might further be argued that such universalization of information services might lead to greater individual fulfillment in a more humane

world."[46]

He proposes the need for creative approaches to the problem that encourages the active participation of the citizenry in determining the solutions to the problems that the information utility will create.

What he proposes is similar to the theme of others who spoke at this 1970 computer conference. J.C.R. Licklider gave the keynote at the conference. His talk raised the question of what the future impact would be of the kind of network of networks that would soon be a reality. Licklider predicted: "The computer and information utility of the future may be a 'network of networks.'"[47]

He also explains that this kind of network will make it possible for computers to talk with one another, and for people to talk with computers, and through the computers and networks, for people to talk with each other.

At the conference, Sackman warned how it would be disastrous to leave the determination of decisions about the developing network of networks to the concern for commercial objectives. "If immediate profits," he wrote, "are the supreme end of all social planning because no other serious contenders arise, then the information utility could end up as the most barren wasteland of them all."[48]

Clarifying the nature of the information utility, Licklider explained:[49]

> An information utility is certainly a meld of computation and communication. I think it is made up of three parts computation and one part communication. The computation parts are processing, storage, and interaction between man and machine. The communication part, of course, is transmission of information. Perhaps we should recognize a forth ingredient, the information itself.

Whether we agree or disagree with Licklider's component parts or his categories, or about which is more appropriately considered computation or communication, Licklider's conceptualization of the information utility as the computer communications system of the future, and hence of the Internet today, is quite helpful.

The 1970 AFIPS conference with the numerous talks about the importance of enlightened government social policy to be developed to determine how the information utility will be administered, is an important document. It shows the concern and foresight of computer pioneers like Licklider and Sackman. They stressed the need for the understanding of how important a responsibility it is for the computer science community and for citizens to work for good social policy to direct the development and administration of a network of networks. They recognized that there was a contest and that the outcome of the contest would either lead to a great leap forward for mankind or to a leap backwards, depending on whether the enlightened government activity that was needed could be achieved.

Licklider, describing how this choice hung in balance, compared the problem to a switch. He warned:[50]

> Thus though the crux is a switch, it is not a switch in a level track. One branch goes down, one up. It's a choice between data and knowledge. It's either mere access to information or interaction with information. And for mankind it implies either an enmeshment of silent gears of the great electrical machine or mastery of a marvelous new and truly plastic medium for formulating ideas and for exploring, expressing, and communicating them.

Today we do indeed have the marvelous new and truly plastic medium for communication that Licklider predicted and we also have the responsibility of determining the future of this important social and technological treasure. Will we heed the warning of Licklider and others of his generation who so clearly saw the challenge, that the development of the Internet presents to our society? Will the challenge be properly taken up so we can indeed proudly welcome in the new millennium? The Internet and the new means of communication that it makes possible fortunately provides us with the ability to meet the challenge.

Notes

1. JCR Licklider and Robert Taylor, "The Computer As a Communication Device," *Science and Technology*, April, 1968. Also, *In Memoriam: JCR Licklider, 1915-1990*, Digital Systems Research Center, Palo Alto, California, 1957. Online at: http://memex.org/licklider.pdf.
2. "MEMORANDUM FOR: Members and Affiliates of the Intergalactic Computer Network. FROM: J.C.R. Licklider," ARPA *Memorandum MAC-M-23*, April 25, 1963. Online at: https://www.kurzweilai.net/memorandum-for-members-and-affiliates-of-the-intergalactic-computer-network.
3. A URL for the discussion is at: http://www.ais.org/~ronda/new.papers/discussion.txt.

4. This discussion was important in many ways as it involved a number of people from diverse communities in a discussion of the importance of and the need to support basic research. A second reason this discussion was especially important is that the discussion was free wheeling. People were willing to cooperate in exploring the issues raised.
5. Ritchie explained earlier in the post: "Rich Rashid was around a couple of weeks ago, and said that there were 300+ employees in MS research . … There are roughly 1200 employees in Bell Labs research, split approximately equally between physical and information sciences. The company is committed to spending 1% of revenues ($7.2B last reported quarter) on the activity … ."
6. See Michael Hauben, "Behind the Net: The Untold Story of the ARPANet and Computer Science," Chapter 7 in *Netizens: On the History and Impact of Usenet and the Internet* for further descriptions of the development of the Network Working Group and an example of an early RFC. The distribution list of RFC 3 was: 1. Bob Kahn, BBN; 2. Larry Roberts, ARPA; 3. Steve Carr, UCLA; 4. Jeff Rulifson, UTAH; 5. Ron Stoughton, UCSB; 6 Steve Crocker, UCLA.
7. Robert Kahn, "Scanning the Issue: Special Issue on Packet Communication Networks," *Proceedings of the IEEE*, Vol. 66, No. 11, p. 1303.
8. "An Interview with Leonard Kleinrock," conducted by Judy O'Neill, 3 April, 1990. Charles Babbage Institute, The Center for the History of Information Processing, University of Minnesota, Minneapolis.
9. Ibid.
10. Ibid.
11. From an Interview with Robert E. Kahn, conducted by Judy O'Neill, on April 24, 1990, Reston Virginia, Charles Babbage Institute, Center for the History of Information Processing, pp. 18-21. Kahn Said:
"When I got there [DARPA] there was money budgeted for a packet radio program, and I undertook to make it happen. The skids were all greased for that. Part way through the first year of the program it became clear to me that we were going to have to have a plan for getting computer resources on the net. In 1973, mainframe computers were multi-million dollar machines that required air-conditioned computer centers. You weren't going to connect them to a mobile, portable packet radio unit and carry it around."
"So my first question was 'How am I going to link this packet radio system to any computational resources of interest?' [Kahn had just succeeded in solving that question with the ARPANet at the ICCC72 show]. Well, my answer was, 'Let's link it to the ARPANet.' Except that these were two radically different networks in many ways. I mean, all the details were different. I don't mean conceptually they were different. They were sort of the same genre. Just like, say Chinese and Americans are of the same genre except one speaks Chinese and one speaks English, one lives on one side of the world, one lives on the other side, they go to sleep during your daytime, etc. The details of the two networks were rather different. The ARPANet ran at 50 kilobits per second and the packet radio system ran at 100 or 400 kilobits per second One had thousand bit uncoded packets; the other had two thousand bit packets which could be coded. The ARPANet assumed that once you sent something it was delivered with a hundred percent reliability. The other assumed that much of the time you would never get anything through even though the system was working. The protocols that were designed for the ARPANet wouldn't work over the packet radio net because when a packet entered the packet radio net, the only thing the ARPANet would have told it was where it came from but not where it was going. So the packet radio net had no further information to know where to route it. If a packet got lost along the way, the ARPANet hosts would come to a halt. Well, in a radio net you can get interference and so some loss is natural So we really had to rethink literally the whole issue of host transport protocols. Vint Cerf and I jointly came up with the TCP/IP concept as a new transport mechanism as part of an architecture for internetworking. DARPA then gave a contract to Vint at Stanford to actually implement the TCP/IP concept - along with small efforts at BBN and at University College London. Vint had the lead for developing the specification."
12. Katie Hafner and Matthew Lyon, *When Wizards Stay Up Late: The Origins of the Internet*, New York, 1996, p. 223.
13. Ibid.
14. Ibid.
15. Vint G. Cerf and Robert E. Kahn, "A Protocol for Packet Network Intercommunication," *IEEE Transactions on Communications*, Vol. Com-22, No. 5, pp. 637-648. The authors called the protocol TCP in their paper (Transport Control Protocol), but later a part of the protocol was split off into a separate protocol and called IP (Internet Protocol), and the name for the protocol then became known as TCP/IP. Online, for example, at: https://www.cs.princeton.edu/courses/archive/fall06/cos561/papers/cerf74.pdf.
16. Ibid., p. 637.
17. Ibid.
18. Ibid.
19. Ibid., p. 338.
The authors write: "It would be extremely convenient if all the differences between networks could be economically resolved by suitable interfacing at the network boundaries. For many of the differences, this objective can be achieved. However, both economic and technical considerations lead us to prefer that the interface be as simple and reliable as possible and deal primarily with passing data between the networks that use different packet switching strategies."
20. Ibid., they explain the rationale for their choice: Their conclusion is, "We obviously want to allow conversion between packet switching strategies at the interface, to permit interconnection of existing and planned networks. However, the complexity and dissimilarity of the HOST or process level protocols makes it desirable to avoid having to transform between them at the interface, even if this transformation were always possible. Rather compatible HOST and process level protocols must be developed to achieve effective internetwork resource sharing."
"The unacceptable alternative is for every HOST or process to implement every protocol (a potentially unbounded number) that may be needed to communicate with other networks. We therefore assume that a common protocol is to be used between HOST or processes in different networks and that the interface between the networks should take as small a role as possible in the protocol."
21. Ibid., p. 638.
22. Some of these others included Ray Tomlinson at BBN, Peter Kirstein at University College, London, and dozens of graduate students including Daryl Rubin.
23. John Adams, "Architects of the net of nets," *IEEE Spectrum*,

September 1996, p. 61. Adams writes: "Minicomputers were used as gateways between networks. Owners did not need to alter their networks, but hooked up to a black box to handle outside connections."
On November 22, 1977 Vint Cerf with a crew of others demonstrated a triple-network Internet. "Radio repeaters dotted the hills around Menlo Park, so that a moving van with a packet radio terminal could send Internet packets into the ARPANet's land lines and through satellites to Norway and University College, London. The packets then returned through the Atlantic packet satellite network to West Virginia back into the ARPANet where they hopped to Machine C at UCLA's Information Sciences Institute (ISI) in Los Angeles. 'The packets took a 150,000-km round trip to go 650 km down the coast from San Francisco to Los Angeles,' Cerf recalled. 'We didn't lose a bit.'" (p. 61)
24. The cutover is described in the draft paper "From the ARPANet to the Internet: A Study of the ARPANet TCP/IP Digest and of the Role of Online Communication in the Transition from the ARPANet to the Internet" at: http://www.ais.org/~ronda/new.papers/tcpdraft.txt.
25. In 1996, Adams reported that there were more than 94,000 networks connected as part of the Internet and the number was growing exponentially.
26. In the Federal District Court Case on the Communications Decency Act, Judge Dalzell issued an opinion where he noted the autonomy of the users on the Internet and advised the U.S. government of its obligation to protect the autonomy of the common people as well as the media magnates. The Federal Court Decision striking down the CDA for interfering with that autonomy, was affirmed by the U.S. Supreme Court.
27. Paraphrase of statement by Robert Kahn.
28. Ibid., note 1, p. 21.
29. See also J. C. R. Licklider, "Communication and Computers," in *Communication, Language, and Meaning: Psychological Perspectives*, edited by George A. Miller, New York, 1973, pp. 205-6. Licklider writes: "The computer has not yet had much effect upon human communication, but I think that in a few years it will have a tremendous effect. I believe that people will communicate through networks of interactive multiaccess computers, making use of programs similar to those already described as aids to thinking – variants of those programs designed to interact simultaneously with two or more users."
30. My research studies have included the follow: one of the earliest online mailing lists on the ARPANet, the MsgGroup mailing list from the 1975-1980 period; early USENET newsgroups from the 1981-1983 period; and ARPANet mailing lists from the 1981-1983 period. See for example, "ARPANet Mailing Lists and USENET Newsgroups: Creating an Open and Scientific Process for Technology Development and Diffusion" at: https://www.ais.org/~ronda/new.papers/msghist.txt and "Early USENET (1981-2) Creating the Broadsides for Our Day" at: https://www.ais.org/~ronda/new.papers/usenet_early_days.txt.
31. Sometimes the discussion on USENET can include over a hundred different comments, often by 3/4 that number of people, which leads to the kind of broad ranging perspective needed to consider an issue. An example was a discussion on USENET when the U.S. Congress passed the Communications Decency Act. It had more than a 100 comments. Also when people who have experience on USENET meet in person they often have an easier time than other people would have exploring an issue where they differ. The people on USENET have grown used to recognizing that differences are a treasure to explore rather than becoming hostile to them.
32. Ibid., note 1, p. 24.
33. Ibid.
34. Ibid., p. 24.
35. Ibid., p. 25.
36. A Brief History of the Internet" by Barry M. Leiner, Vinton Cerf, David D. Clark, Robert E. Kahn, Leonard Kleinrock, Daniel C. Lynch, Jon Postel, Larry G. Roberts, Stephen Wolff. https://www.internetsociety.org/internet/history-internet/brief-history-internet/. See also "Imminent Death of the Net Predicted!" Chapter 12, in *Netizens: On the History and Impact of Usenet and the Internet* by Michael Hauben and Ronda Hauben, IEEE Computer Society Press, Los Alamitos, CA., 1997. (There is a draft version of this book online at: http://www.columbia.edu/~hauben/netbook/.)
37. The conference was the "Virtual Conference on Universal Service and Open Access to the Telecommunications Network." See, *Ibid*., Hauben and Hauben, Chapter 11, "The NTIA Conference on the Future of the Net: Creating a Prototype for a Democratic Decision-Making Process" and Chapter 14, "The Net and the Future of Politics: The Ascendancy of the Commons."
38. See *Netizens: On the History and Impact of Usenet and the Internet*, p. 216. Steve Wolff who was then head of the NSFNet, at a meeting in 1990 about privatization, is quoted saying "it is easier for NSF to simply provide one free backbone to all comers rather than deal with 25 mid-level networks, 500 universities, or perhaps tens or hundreds of thousands of individual researchers." The Report that was then online describing the 1990 conference at the Harvard Kennedy School of Government noted that the privatization would probably lead to only the wiring of the geographical areas where companies could be confident of high profits, which would be large metropolitan areas with a high percentage of Research and Development facilities. This practice of only providing access in areas that companies believed would be highly profitable is known as cream-skimming. Thus the decision to privatize was understood to be contrary to the public policy goal of providing access for all to the Internet.
39. In "A Brief History of the Internet" the authors note that the NSFNET program cost the U.S. taxpayer at least $200 million from 1986 to 1995. That during "its 8-1/2 year lifetime, the backbone link had grown from six nodes with 56 kbps links to 21 nodes with multiple 45 Mbps links. It had seen the Internet grow to over 50,000 networks on all seven continents and outer space, with approximately 29,000 networks in the United States." Similar large amounts of taxpayer funds were spent for the development of the ARPANet. Thus the goal of access for all to the Internet as a new means of communication is a fitting obligation of government in return for utilization of taxpayer funds to create the ARPANet and the NSFNET.
40. See letters dated Oct 15, 1998 from Representative Tom Bliley, Chairman of the House Committee on Commerce, to Ira Magaziner, Senior Advisor to the President for Policy Development and William M. Daley, Secretary of Commerce. Also see a letter to Congressman Bliley at: http://www.columbia.edu/~rh120/other/letter_to_congress.txt.
41. See the Memorandum of Understanding (MoU) at: https://www.ntia.doc.gov/page/1998/memorandum-understanding-between-us-department-commerce-and-internet-corporation-

assigned-.
42. See NTIA website for the Green Paper discussion at: https://www.ntia.doc.gov/legacy/ntiahome/domainname/proposals/comments/comments.html. The Green Paper can be seen at: https://icannwiki.org/Green_Paper.
43. Harold Sackman, "The Information Utility, Science and Society," in *The Information Utility and Social Choice*, eds. Harold Sackman and Norman Nie, AFIPS Press, Montvale, NJ, 1970, p.157.
44. Ibid., p. 158.
45. Ibid., p. 159.
46. Ibid.
47. J.C.R. Licklider, "Social Prospects of Information Utilities," in *Ibid*., note 43, *The Information Utility and Social Choice*, p. 18.
48. Ibid., note 43, Sackman, p. 144.
49.*Ibid*., note 47, p. 6.
50. *Ibid.*

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