

Social Implications of
Advanced Communications

by Eli M. Noam

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Columbia Institute for Tele-Information
Graduate School of Business
Columbia University
809 Uris Hall
New York, NY 10027
(212)854-4222

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Eli Noam
Columbia University

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The Clinton Administration has set up a high-level Information Infrastructure Taskforce. One of its missions is to flesh out the concept, advanced especially by Vice President Gore, of the information superhighway.

Putting together the sectors in which America is strong -- communications networks, media entertainment, and computers -- can have great benefits for economic growth, opportunity, and mobility. It won't be easy to accomplish, given the hostility among the different segments of the communications industry that make the Middle East seem peaceful in comparison. But suppose the many regulatory, political, and technological shoals will have been skillfully navigated, and then we will have widespread and affordable high-performance "network of networks", full of attractive Hollywood and Silicon Valley productions. What will be

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the impact?

If we are talking about information superhighways, let us recall how much the Interstate Highway system changed post-World War II America. It transformed the way we live, work, shop, and socialize. It radically changed the cityscape. In the 19th century, the railroads similarly remade the American social geography. Might not the electronic superhighways have similar far reaching effects?

It is not naive to imagine that the new communications capabilities would be used just for the same old purposes?

This will be the subject of my talk.

Marconi was once asked what the difference of radiotelegraphy and the Morse telegraph was. And he said, "Morse's telegraph is like a dog, you pinch him in the tail, and he barks in front. And my telegraph? It's the same idea, except without a dog.

It would be shortsighted in the extreme, for example, to think of mobile communications as just a dogless telegraph, a cordless phone, a mere convenience.

Most people believe that the more communications we have, the more

we grow together. I just think that's wrong thinking.

I'd like to propose as a basic principle that anytime one adds or enhances some informational flow, one subtract or reduces other informational flows. If one develops new routes of communication, old ones atrophy.

Take for example, mobile communications. We must stop thinking of telephony and mobile communications as a person-to-person technologies. They are just as much a group medium, a broadcast medium, a mobile bulletin board. New groups form, and old ones die.

Eventually, for example, telemarketer will call to hundreds of people at the same time, broadcast fashion, send out fliers and video messages to them, broadcast fashion, targeted only to very specific group, by dialing their numbers. Or by reaching everyone who happens to be at a particular shopping mall or intersection. Entertainment programs can't be far off, either. And, of course, adult programs.

There will be, no doubt, **personal broadcasting** where a person can simply call out to hundreds of often innocent tele-bystanders and transmit -- via voice, text, or video -- their views on any

subject.

But if everyone will talk, who will listen? It's like writing academic articles. There is only so much attention span to go around.

The inevitable outcome of personal broadcasting will be: first, an escalation of the "heat" of presentations, in order to get attention, like those hyper-active disc-jockeys and talk-show hosts. Second, specialization into micro-casting, where people talk to highly specialized audiences, and audiences become increasingly fragmented.

The emergence of tele-cults, of electronic communes, will then be inevitable.

Political groups can become continuously connected to each other. The term "political network" becomes one of telecommunications reality. Groups talking to each other become a form of community, despite physical distance.

There is no need for these groups to be of people who are physically close to each other. They could be all over the country. And with automated translation, they could be all over the world.

In consequence, as one gathers distant electronic friends, the local and territorial bonds weaken. The new telecommunities become the new social environment. But these aren't just the electronic equivalents of physical communities. By their nature, the telecommunities would tend to be specialized and stratified. This will tend to generate narrow, specialized groups of people who share interests and views, and will generate inevitably lead to some intolerant and extreme groups. There is less of the averaging that goes on in the physical community.

Naturally the workplace would also be transformed. In the past, jobs and work arranged in a way that assures physical access to the physical object of work, and of physical teamwork. So people worked close to each other and to the object of their physical labor.

Later, with informational occupations, access to data files and information flows, became the key.

Within an organization that meant substantial stationariness. But now, the need for physical presence declines. Face-to-face is still important, of course, but not at any cost, and commuting and office space are expensive, so there will be less of it.

There are advantages to this. Flexibility, proximity to family, ability to travel, and the ability to uncouple locational decisions on the place of residence from the locational decisions on work.

In consequence, the office will become "virtual" rather than physical. The company itself becomes a virtual organization, a network relationship.

Indeed, one may work for several such virtual organizations at the same time, and the classic employer-employee relationship may be superseded by freelance type arrangements in which the organization bids for particular skills it needs at that moment, with no long-term commitments, and even more anonymity than in the past.

As the electronic community keeps intruding into the physical community, in theory, one can escape continuous availability by disconnecting. But in practice, one is expected to be reachable. In practice one depends too much on the social and professional ties to disconnect. It's like telling people in Los Angeles to walk, because it's healthier. They understand that, but the lifestyle and workstyle makes it impossible for them to do it anyway.

As people work and relate to others in their telecommunitites, they

also begin to use increasingly specialized jargons of communications, and drift out of their time zones to adjust to that of the group. Examples are the stockbrokers in California, who already keep weird hours in order to trade with the east.

In an environment of virtual communities, which is the main one? Is it the territorial community? That was only one way to slice up the country, or the globe. In a virtual environment, territoriality becomes secondary. In the old days, if people wanted to change communities, they emigrated to America. In the future, they will simply join another telecommunity, change their friend and as tele-immigrants work by changing access codes.

The telecommunities themselves will become more and more important. They will assume aspects of quasi jurisdiction. They inevitably will have to mediate among their members, assign cost shares for their activities, have contests over control, hold elections, accept members, expel others, etc. Since these new communities are highly vulnerable to breakdowns of systems, they must institute security arrangements. They become like territorial jurisdictions. And this will inevitably change politics. Take congress. Right now it's organized around the territorial principle of group representation. A physical district sends someone to Washington to represent it. But who says that's the only way? If communities

define themselves differently, such as electronic telecommunities, the territorial system may, in time, become obsolete. We can see this already in the gerrymandering of districts for reasons of minority representation. That has stretched the territorial principles to its limit. If we take the racial angle out of the debate, which tends to polarize, let's just ask whether physical electoral districts are the best way to organize a democracy in the future, if people feel more at home in the tele-community than in the territorial one.

In the 70's Marshall McLuhan predicted the emergence of the "electronic global village", an inspiring image, communal and peaceful. But instead, technology is helping to create narrow and specialized electronic neighborhoods, "telecommunities" of people with shared interests and outlooks. Local bonds of community weaken. One example is religion. Today's electronic churches gather adherents through satellite channels, 800 numbers, and telemarketing, in the process weakening traditional denominations and neighborhood churches that are a mainstay of community.

This gets me back to the administrations's initiative on the information infrastructure. The advancement of electronic superhighways will accelerate these trends of centrifugalism. Mainstream community organizations, are slower to transform

themselves electronically than business enterprises or fringe non-profit organizations. To reshape institutions electronically requires initiative, money, and expertise. Grassroots efforts are essential, but they need to be supplemented by the resources and expertise of the information industry, government, universities, and computer fans. What then should we do? I have two proposals to make. The first is to create a non-profit Corporation for Public Network Applications, similar to the Corporation for Public Broadcasting, and funded by industry and government. Such an organization would provide seed money and channel expertise to various local community pilot network applications projects. Rather than developing leading-edge technology for advanced users which is what government is funding under the various present programs. This public corporation would help some of the technically small, unsophisticated, but socially unimportant non-profit organizations to develop tools to modernize themselves. The corporation, and its equivalents on the state level, could experiment, evaluate, inform, and recommend. Its non-governmental status would help it to be supported primarily by private sector money, and to draw unbureaucratically on the enormous creative energy of the computer network community.

And let me make a second concrete recommendation, this one about universal service.

Imagine a tele-society as i've described it, yet with some people not able to afford to connect into it. They will be physically there, but not socially or economically. They'll be like aborigines living in territorial reservations in a larger society.

The system that we have today for paying for universal service is based on the monopoly system, not on a competitive system. Therefore, some people want to slow competition in order to preserve universal service. This, in my view, was a serious mistake by the public interest movement in the 1980s. Other people, on the other hand, want to reduce universal service in order to increase competition. I think both positions are wrong. What one has to do is to reform the financing system of universal service, so that it becomes independent of whatever the industry structure of the telecommunications system is. So we can encourage entry and choice, while preserving universal interconnectivity.

To conclude:

I have tried, in the past weeks, to draft such a reformed system of financing universal service. I don't have the time now to go into details. I will be happy to share them with those of you who are interested and give me their addresses.

I have consciously painted an extreme picture. Reality has always been more gray than black and white. At present, we are at the beginning of this evolution, and there is time to think. But when one has no idea where one is going, one may actually end up there.

The policy conclusion for the negative side-effects should not be to slow the rapid evolution of a high-technology infrastructure. But we should be ready to deal with some of the inevitable negative impacts, too, in a way that the planners of the automobile highway system never did when it came to the cities. If we do that, we can have the best of both worlds, we can have our network and eat it, too.