

The Spirit of Access: Equity, NREN and the NII

Richard Civile, NET '93 Plenary, April 15, 1993

Last summer, Citizen Perot said the nation needed to have a good long conversation with itself. Since then, the notion of the electronic town hall, or electronic town meeting has become synonymous with the phenomena of the clever use of telecommunications during presidential and other campaigns designed to influence and sway public opinion. By using talk shows or call in touch-tone opinion-polling, the growing urge of the American public to increasingly participate has been seemingly addressed. The idea of the electronic town meetings has been in need of some fresh critique.

There have been several conferences over the past six months addressing this new phenomena in American politics, all of which attempted to deal with better defining what an electronic town meeting is, is not and what it could be. There aren't any reports out yet from these meetings. The Aspen Institute conducted one last October, the Meridian Institute in California held a small conference and my shop, the Center for Civic Networking, founded last July to promote the civic uses of internetworking technologies, held a fairly large policy meeting here in Washington just a few days ago.

I'm here to talk about some emerging new views and trends about information democracy, and how it relates to the purpose of NET '93, that is "broadening the benefits." I'll talk about electronic town halls and the reform of democratic institutions and a movement we call civic networking which highlights local connectivity to the national information infrastructure and the applications useful to communities and institutions. I'll also talk a bit about the pressing need to more effectively research and address issues of information equity and network literacy. And I'll close with some examples of policy models and information applications which might suggest some direction for a new communication policy agenda which could support the broadest range of publics, and their many diverse interests.

Defining Electronic Town Meetings

What is an electronic town hall, or an electronic town meeting? A consensus seems to be emerging from discussions held by the kinds of groups I just mentioned. That consensus seems to be that the real value of an electronic town meeting may be in enhancing the process of *deliberation*, that is the public study and debate of an issue working towards a political decision, rather than the decision itself, that is the act of voting, responding to survey or the voicing of an isolated opinion on a call-in show or an 800 number.

However, as we've seen, much of the clever uses of telecommunications used for political campaign purposes disguised as electronic town meetings don't quite fit this bill. One of the values of the traditional New England town meeting is that it teaches the civic virtues of debate and deliberation; all of the stuff that precedes the vote. Think about it: about all that is left of the average American's political participation is the franchise. And as less people participate in the deliberative process, the less they have any vested interest in the outcome, and the less likely they are to vote.

Gathering Civic Intelligence

If the idea of an electronic town meeting as a means to broaden participation in the deliberative process of a democracy seems appealing to you, then we need to talk a minute about intelligence and the way we design information services. A better debate evolves out of a better informed populace, as Madison might say. Better information is tailored, filtered, contextualized — not the firehose we all moan about these days. In fact not information at all, but intelligence — the really useful, compelling stuff that

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helps you peer into the future and plan accordingly. Like weather reports. Or, the White House initiative to post speeches, press releases, position papers and the federal budget proposals on the internet for all to grab in full text before the New York Times comes out tomorrow to tell you what to think. Intelligence is what makes you feel "in the loop." Better intelligence — the more informed the debate. Former Marine intelligence officer Robert Steele argues that Open Source intelligence gathering — the huge billion dollar per year government industry which produces non-classified strategic assessments of everything under the sun perhaps should be reorganized with the view that a network-literate American public is the proper audience of such intelligence assessments. After all, gathering civic intelligence is part of the deliberative process of debate and consensus.

Metaphorical Constraints and Pitfalls

Telecommunications indeed shows promise in bringing more people back into the political process of debate and deliberation. Yet, we need to move away from the kind of abstract and oxymoronic "National Town Meetings" we see on television — for how can a nation be a town, or a town a nation — and bring our view back to the streets and communities in which we live, get real and smell the coffee. There are real problems of language here. Electronic mail isn't *really* mail, right? Its something else, but the metaphor here helps people find something familiar in making an extraordinary leap in their communications habits. Same thing with "word processing." This term disabled the thinking of millions of managers all over the country, who were crippled into believing that a PC was just a faster typewriter. We have to be very careful about defining a term like "Electronic Town Meeting", especially where the affected population spans hundreds of thousands of square miles and may number in the tens of millions. Does such an event sound like a town meeting or a town hall to you? Probably not, it is the image the metaphor paints in our imaginations that compels us. We can be fooled or limited by these metaphors if we're not careful.

Civic Networking

Perhaps a more accurate term might be civic networking. What is civic networking? A country that works smarter; that enjoys more efficient, less costly government — guided by a better informed citizenry; that supports job growth through small businesses; that promotes life-long learning — will be a country laced with a high-speed infrastructure for information with civic purpose. While the "long-haul" components of such an infrastructure may be best left to the private sector, funding local connectivity; that is, the linking of schools, libraries and civic institutions — the onramps to the information highways — appears to be a role for good government to play.

Civic networks are grass roots communications initiatives. They provide new ways to combine media to improve access to public information, enhance participation in government, and aid in the convenient discharge of public obligations. These initiatives are testbeds for developing new forms of citizen participation, new ideas for information services and their delivery, and new models that can inform developers of state and federal policy. Lane-Online in Oregon established internet access for local communities and civic institutions just a few weeks ago. The Bloomsburg Telecommunications Consortium in Pennsylvania struggles to bring together a public/private partnership to use telecommunications in local economic development, but has no effective voice in the state legislature. The Grand Rapids Institute for Information Democracy has turned an old Carnegie library into a model media center combining public access to television, radio, film archives, computers and information services, arts and crafts, education and training. Everything from the uplink on the roof to film production workshops to training in desk-top publishing to the internet node. All under one roof. Volunteer organizations in Vermont have been so active promoting public participation in telecommunication policy that over twenty new bills have been introduced this session ranging from public access to state GIS data to the levying of gross receipts taxes on all telecommunications service providers to support important public applications in education, health and governance.

The number of practioners are growing, and they are growing increasingly aware of each others' efforts and are beginning to move towards a natural, and new coalition with an important voice which may begin to reframe current debate. We believe there will be Administration support for this view, indeed the Administration has said that: "We will upgrade our nation's roads, bridges, mass transit; and create 'information highways' that link homes, businesses, schools and libraries to databases and public records."

Reframing the NREN/NII Debate

The debate has begun to shift away from "Big Pipes for Big Science" or "Home Delivery of Terminator III" to the real socio-economic benefits of improving government services and their delivery, broadening access to education and job training, and promoting civic participation down home in real communities where the economy is directly affected. Yet while equity issues gain currency, we find to our utter embarrassment that we have no more good data to promote this view than the telcos have in telling us there is really some vast market around the corner for pay-per-view or the big research universities with overhead rates in excess of 50% have in swearing to us that the big grand challenges will be solved only if the government gives some big wad of money away to develop some kind of big ivory tower supercomputer for big science that will probably appear on my desktop via some outfit in South Korea in the next few years anyway for about fifteen hundred dollars.

We have to become very concerned over the state of research in the area of information equity. The study of socioeconomic impacts of a growing national information infrastructure is pretty much in its infancy, and hasn't really moved beyond the early phase of rhetorical debate and assertion of moral imperatives. This kind of academic work must begin to parallel basic computer science research. If government is going to invest the public purse in high performance computing and networks with the full assumption such technologies will become a primary domain of commerce and livelihood, we have to start finding out whether these networks will tend to lift Americans out of poverty — and help make work pay — or drive them futher in while accelerating the widening income gap the country has seen over the past ten years.

What do we need to know about network literacy — the functional equivalent of driver education for the 21st Century, and how do we change curriculum to help prepare all students? How can we go about examining census and labor statistics to begin to see the effects of network growth on various sectors of society in the creation of opportunities or the elimination of them?

Towards a Definition of Information Poverty

American Poverty is Growing

There are 35 million poor people in the United States, about 14% of the population. The poverty line is \$12,000 for a family of four and the so-called "low-earnings threshold" is \$14,000 a year. Minimum wage has not kept pace with inflation for well over a decade and many working poor cannot escape poverty with full-time jobs. Only 5% of males in their prime earning years, between the ages of 35 and 54: had low annual earnings such as these 1974 but this shot up to 7.5% in 1989 and then again to 8.9% in 1990, one year later. Dispite popular opinion, most of the poor in this country are not minorities. They're white. Over 50% percent as a matter of fact in absolute numbers (Center on Budget and Policy Priorities, 1992). Not only that, but the poverty rate for white people in the United States is higher than any other industrial democracy, and it is acclerating, from 9% to 14% over the past two years. One in five children are poor. I don't mean to gloss over poverty among minority groups. Over 50% of children under six years old are poor -- and black. This past recession has driven over 4 million more people into poverty. Many are still there.

Even if you have four years of college your earnings -- on average -- started heading south in 1987. But the cost of a college education is rising, and without it things are far worse indeed. Two years ago, young male and female high-school graduates earned 26% and 15% less, respectively, than in 1979 (Urban Institute). Everything costs more, like rent. This means flipping burgers, living at home, and hang out. These unfortunate young people, often called "Slackers" don't generally show up as a statistical group because so many still live at home and are carried as dependants by their middle class parents. Almost half of all workers without health insurance in 1990 were already part of the full-time labor force. The Urban Institute has found that "Lifetime incomes are becoming more unequal. The bad jobs in our economy are now paying less in real terms than they did in the early 1970s and the people who hold them aren't moving out of them with any more frequency than before. We can expect their lifetime incomes to be lower than those of people who held these jobs in the past." Indeed, the United States now has the largest low-income class, the smallest middle class and the third largest high-income class of the eight major industrial democracies.

Where is Network Literacy Taught?

Robert Reich, the new Secretary of Labor, says there are now three general types of jobs, two of them dead-end -- which most poor and middleclass children are prepared for in school -- and one with great promise -- which our most fortunate children are groomed for. These three are routine production workers, in-person service providers and symbolic analysts. For example, data entry operators (whose jobs move off shore), janitors (the work can't move offshore, though your employer could), or an architect. A lawyer could be a symbolic analyst if creative -- that is inventing new ways to sue, or could be just another routine production worker -- churning out the same wills and contracts day after day. We have cheap software to replace that guy already.

The American educational system was designed to prepare workers for smokestack industries, not symbolic analysts for the information economy -- and it still does. 17% of all seventeen year olds are functionally illiterate, yet another 20% are being beautifully prepared to become marketing strategists, film producers, writers, software engineers, sound engineers, research scientists -- symbolic analysts. 20% of our children have attentive teachers, small classes, get good health care when they need it, attend good suburban public or elite private schools and are tracked through advanced courses in the company of their fortunate peers (Reich, 1990). They have access to computers, good science laboratories, video systems in class, and increasingly -- the Internet. They are taught the art of abstraction -- of finding the pattern that connects, as Gregory Bateson once said, of system thinking -- seeing the whole, the big picture, how to experiment, test and fail, and most importantly, how to collaborate, work as a team, and to negotiate.

They are learning network literacy. Most students in the United States are not taught this way, and do not have access to these kinds of resources. For them, meaning is imposed, not discovered or owned, interpreting reality or determining fact from fiction is someone else's responsibility. The danger here of course, is that in many low-income areas where dropout rates are out of control, there is the potential for backlash in actually increasing the intensity of this kind assembly-line rote-memorization instruction rather than embracing the need for fundamental change. Low-income neighborhoods are often very tradition bound, and parents often wish their children to be taught as they were. Poor children are not taught in the same manner as the elite, and the jobs they are being prepared for increasingly no longer exist.

Network Growth as a Measure of Information Poverty

Consider the growth of the Internet. By many accounts nearly 20 million people are connected to the Internet, most of them in the United States. This number keeps growing. Many users have the abstract, analytical skills to use the net well as a research tool, a personal library, and to collaborate

with working groups in productive, symbolic work. The growth rate is about 5% per month, roughly doubling once a year. At this rate, we could expect the number of individuals productively using the Internet to equal -- or surpass -- the number of Americans below the poverty line within perhaps as soon as two years. When the number of Americans productively using the Internet for symbolic work equals or exceeds the number of Americans below the poverty line, will we have quantified the elusive definition of a two class society of information haves and have nots? Two years is not far off.

Information Infrastructure and Benefits to the Poor

Possibly the greatest contribution of the national information infrastructure will be to those who are poor. Consider a family with a single mother in a housing project in Chicago (Fisher, 1992). Her name could be Gonzales, Nguyen, Hakim, or Jones. Working part-time she lives with her pregnant 16 year old daughter, a two year old grandchild and a 17 year old son on probation. They have a telephone and a television -- connected to the net.

The mother switches to interactive health-care programs to learn about her grand-daughters's asthma. The program gives guidance on medication and home-care based on the little girl's symptoms. Another health care program helps the mother assess a newly discovered mole on her face. Many pictures are shown of good and bad moles. She learns that hers is not a bad mole. Two trips to the health clinic have just been saved -- the taxpayers save money while the mother becomes empowered. Much interaction with welfare agencies is done over the television set, using a joy-stick to select the appropriate department. If she cannot understand the words for various agencies or benefit forms on the screen that she needs to fill out, the set reads them out to her, patiently, line by line with an image of woman speaking in her native tongue. She can connect to her daughter's school and watch teachers explaining homework assignments for the week. Using a voice mail utility, she can leave messages for her daughter's teacher and check her message box for news about school events and parent's meetings. She has begun to collaborate with a new team of other low-income parents to urge the school to buy a vacant lot adjacent to the campus. This is the first time she has participated in any kind of civic activity. The mother's daughter uses the television to participate in a support group of teenage mothers that meet over the network. Her son uses the network to get temporary job assignments in grocery stores around town. He is using the television to improve his English, in lessons adjusted to his skill level, and is studying math to improve his skills to apply for a cash register position. Both literacy and math programs are available at a downtown learning center, but the distance and his irregular work schedule make home study much easier -- and much less embarrassing (Fisher).

In this scenario, a computer, television and telephone are merged into one modestly priced consumer electronics device. Does this require some kind of gee-whiz megapipe broadband firehose? We'll get there, but consider what we could be doing very soon. Families were buying interactive CD players last Christmas. 25,000 units a month. Give your kid a joy stick and an interactive encyclopedia, plugged into the TV. Are we really that far away from using the cable networks, or ISDN to switch to resources on the net? Some studies assess the value of the activities in the United States which could be affected by interactive imaged information to the home, for purposes of health, governance and citizenship, informal education, job training, literacy, numeracy, and English as a second language to be in the range of several hundreds of billions of dollars annually.

Network Growth, Cost Containment and the Deficit

If, on average, Americans, with a better communications and information system, saved a half day a year in dealing with government, that might come to roughly 1/500 of GNP, or about \$10 billion a year. Job training: The imaging power of technology can provide a simulated task environment a worker needs to practice needed skills. How valuable could universal job training be if

such services were available in the home? IBM and Xerox spend 4% or more of payroll on training. Estimates of how much is spent in the country as a whole on formal job training vary between \$30 and \$44 billion, or 1.3% to 1.8% of annual payroll. If the economy could gain from training as much as IBM or Xerox think its worth the increase in value could be on the order of \$100 billion annually. Better informed decisions about surgical procedures could save Medicare billions of dollars a year (Malmud and Fisher, 1991). Viewed in these terms, a telecommunications infrastructure represents cost-containment. This is a completely different way of valuing the public telecommunications infrastructure and is quite distinguishable from traditional business models promoting, for example, interactive entertainment and pay-per-view television. Yet — again — the economic research in this area is poor, and only at the earliest stage of inquiry.

Community Applications and New Options for Federal Policy

In Ohio, the Youngstown Freenet, a public computer network which provides free access to Internet mail, a social services directory is available. If you are poor, you can go into a public library and sit a terminal. Using the arrow and enter keys are about all you need to do. People figure it out. You can navigate through a directory, alphabetically organized, of all manner of agencies, churches, services -- and make your own decisions based on what you can learn at that terminal. And people do. This kind of social service "gateway" helps poor people gather intelligence. In the not too distant future, these gateways can be provided by internetworking through the television set with a Nintendo joystick. In Santa Monica, there is the important case of homeless people using a public access network called "PEN" to organize with citizen groups. Such activity has also taken place over the Community Memory Project in Berkeley.

What about job banks? A \$14 million dollar Labor/Worker Profiling program in 1993 and 1994 is proposed "to assist the States in developing automated systems to identify laid-off workers who may have had difficulties in finding new jobs, and to assist them in finding employment" (A Vision of Change for America, 1993). Such automated systems, developed by states, could be readily integrated into job banks offered through non-profit public access computer systems under development in many cities around the country. What if local civic networks, like the Youngstown Freenet, maintained an online job bank that was interconnected with this envisioned federal system? And what if you could navigate this job-bank at home, using your existing television set or a very inexpensive PC with a joy stick?

The Administration has proposed \$64 million in stimulus funding for Information Highway demonstration project grants for schools, cities, and non-profit organizations through the National Telecommunications and Information Administration. This appropriation could rise to \$150 million a year by 1995 (A Vision of Change for America). Civic networking initiatives -- that is, regional and local public information systems and services -- fit this stimulus framework well. NTIA grants for local, non-profit demonstration projects could thus help leverage other federal efforts, such as the Labor/Worker profiling program.

The venerable Cooperative Extension Service (CES), which grew from Abraham Lincoln's establishment of the Land Grant system to disseminate university research to useful, local applications has strongly embraced the Internet and worked hard to shift its mission away from serving a dwindling base of family farmers. The CES now seeks a far more diverse client base of small businesses in rural communities and is developing 21st century services, ranging from manufacturing research to child care training. By the end of 1993, the CES plans to have all county extension agents on the Internet. With its century old service tradition with Land Grant colleges providing public access to university research, some state extension services -- notably Pennsylvania -- have implemented public access computer networks through county extension offices. They have proposed to offer local dial-in Internet access to farmers, schools and civic institutions for only a modest upgrade of their existing systems. Combining new efficiencies and information technologies, with a

an old service tradition embracing public access at the community level could have important benefits to civic networking initiatives around the country, and broaden the benefits of the NREN.

Proposed Community Development Banks would receive \$350 million over four years to finance small businesses and service programs in depressed inner-city locations, while a rural development initiative would pump hundreds of millions targeted to small, emerging "micro-enterprises." These investments would provide "increased employment opportunities for rural individuals, and upgrade community infrastructure to improve the quality of life for all rural residents." Such infrastructure, particularly to support very small businesses, could also support locally operated information services which could bring additional incomes to rural communities. Within this mix again, are funding opportunities for civic networking at the regional and local level, where such activities show promise in quality of life improvements or community development.

Conclusion

Information infrastructure funded by government should target important non-market applications beyond simply big science's grand challenges. Such non-market applications should promote preventive health-care, job training, informal education, enhance civic participation in governance, and reduced costs of delivering services. Pilot projects should be funded within strict criteria which could demonstrate and evaluate the use of available, open platform technologies which use internetworking tools, in coordinating and integrating local public activities conducted across all media -- radio, television, cable and computer. Finally, any long-term strategy for a National Information Infrastructure which uses public money (that is to say, where the NREN is heading) -- particularly if used to leverage private investments -- must also demonstrate positive effects on low and moderate income families, and potential for lifting Americans out of poverty rather than creating a two-tier society of information haves and have-nots. An infrastructure is not only a set of facilities, but the people and skills needed to use them. Facilities, people and skills must be commonly available to further activities of both public and private parties. Ultimately, when people have access to, and the skills to use the infrastructure, they more fully share in its benefits, and the nation will as a whole, will benefit as well.

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