The Project Gutenberg eBook of NREN for All: Insurmountable Opportunity, by Jean Armour Polly

NREN for All:

Insurmountable Opportunity

When Senator Al Gore was evangelizing support for his visionary National Research and Education Network bill, he often pointed to the many benefits of a high-speed, multi-lane, multi-level data superhighway. Some of these included:

— collaborating research teams, physically distant from each other, working on shared projects via high speed computer networks. Some of these "grand challenges" might model global environmental change, or new therapeutic drug research, or the design of a new airplane for inexpensive consumer air travel.

— a scientist or engineer might design a product, which could be instantly communicated to a manufacturing plant, whose robotic machine could turn the drawing-board product into reality. One example of this is the capability to digitally measure a new recruit for an army uniform, transmit the information to a clothing manufacturer, and take delivery of a custom-tailored uniform the next day.

— access to digital libraries of information, both textual and graphic. Besides hundreds of online public access catalogs, and full text documents, color illustrations of photographic quality, full motion videos and digital audio will also be available over the network.

In his many articles and speeches touting the bill, Gore often used an example of a little girl, living in a rural area, at work on a school project. Was she information-poor due to her physical location, far from the resources of large cities? No— the National Research and Education Network would give her the capability to dial into the Library of Congress— to collect information on dinosaurs.

Now that the NREN bill has been signed into law (12/91), and committees are being formed, and

policies are being made, I'm still thinking about that little girl, and her parents, for that matter. In fact I've got some "Grand Questions" to pose.

1- How will we get access?

The Internet has been called the "Interim NREN", since it's what we have in place now.

I'm wondering how the family is going to get to the Internet "dial tone", let alone the NREN, especially since they live in a rural area. The information superhighway may be miles from their home, and it may be an expensive long-distance call to the "entrance ramp".

Or, the superhighway may run right through their front yard, but they can't make use of it because they have no computer, no modem, and no phone line to make the connection. What good is a superhighway if all you've got is a tricycle?

2- What will they be able to gain access to, and will their privacy be protected?

Beyond the infrastructure issues, I'm concerned about what kind of things will be available for them once they do get connected, how the resources will be arranged, and how they will learn to use these tools to advantage. Beyond that, how authoritative is the information in the digital collection, and how do we know for sure it came from a legitimate source? How confidential will their information searches be, and how will it be safeguarded?

3- Who will get access?

I'm concerned that even if the infrastructure and resource problems are resolved, that little girl still won't be allowed access, because a lot of folks don't think the Internet is a safe place for unaccompanied minors.

4- Does the family have any electronic rights?
Electronic responsibilities?
Are dinosaurs and a grade-school project too trivial for NREN?

Some people think the NREN should be reserved for scientists working on "Grand Challenges", not ordinary ones. Who will decide what constitutes "acceptable use"?

5- What is the future of the local public library?

Worse yet, I'm worried that the reason they are phoning the Library of Congress in the first place is that their local public library has shut its doors, sold off the book stock, and dismissed the librarian. What can public libraries do to avoid that future?

Brief Background: The Internet Today

Computers all over the world are linked by high speed telecommunications lines. On the other side of their screens are people of all races and nationalities who are able to exchange ideas quickly through this network.

This "brain to brain" interface brings both delight and despair, as evidenced by the following True Tales from the Internet:

— Children all over the world participate in class collaborations, sharing holiday customs, local food prices, proverbs, acid rain measurements, and surveys such as a recent one from a fifth grade class in Argentina who wanted to know (among other things) "Can you wear jeans to school?".

— During the Soviet coup in the summer of 1991, hundreds read eyewitness accounts of developments posted to the net by computer users in Moscow and other Soviet cities with network connectivity. A literal hush fell over this side of the network after a plea came across from the Soviet side. We appreciate your messages of encouragement and offers of help, it said, but please save the bandwidth for our outgoing reports!

- Proliferation of discussion groups on the Internet means one can find a niche to discuss everything from cats to Camelot, from library administration to lovers of mysteries, from Monty Python to Medieval History.

— Predictably, Elvis has been sighted on the Internet.

Besides electronic mail, full text resources may be downloaded from many Internet host computers. Some of these are religious materials, such as the Bible, and the Koran, others are the complete works of Shakespeare, Peter Pan, and Far From the Madding Crowd.

Searchable resources include lyrics from popular songs, chord tablature for guitar, recipes, news articles, government information, Supreme Court Opinions, census data, current and historical weather information, dictionaries, thesauri, the CIA World Fact Book, and much more.

Hundreds of library OPACS may be searched, and those with accounts set up at CARL may use UnCover to find articles of interest, which then may be faxed on demand.

The richness of the Internet changes on a daily basis as more data resources, computer resources, and human resources join those already active on the net.

But, back to that little girl.

How will she get access?

She'll need a plain old telephone line, a modem, a computer, and
some communications software. Will her family be able to afford it?
If not, will she be able to dial in from her school? Her Post Office?
The local feed store? A kiosk at K-Mart?

At the American Library Association's 1992 convention in San Francisco, Gloria Steinem said "the public library is the last refuge of those without modems." I'm sure she meant that the library will act as information provider for those unable to get their information using a home computer's telecommunications connections. But it could be taken another way. Couldn't the public library act as electronic information access centers, providing public modems and telecommunications alongside the books and videos?

Why the Public Library is a good place for NREN access

The public library is an institution based on long-standing beliefs in intellectual freedom and the individual's right to know. Let's revisit ALA's LIBRARY BILL OF RIGHTS, Adopted June 18, 1948; amended February 2, 1961, and January 23, 1980, by the ALA Council.

The American Library Association affirms that all libraries are forums for information and ideas, and that the following basic policies should guide their services.

1. Books and other library resources should be provided for the interest, information, and enlightenment of all people of the community the library serves. Materials should not be excluded because of the origin, background, or views of those contributing to their creation.

No problem here. The Internet's resources are as diverse as their creators, from nations all over the world. Every community can find something of interest on the Internet.

2. Libraries should provide materials and information presenting all points of view on current and historical issues. Materials should not be proscribed or removed because of partisan or doctrinal disapproval.

3. Libraries should challenge censorship in the fulfillment of their responsibility to provide information and enlightenment.

4. Libraries should cooperate with all persons and groups concerned with resisting abridgment of free expression and free access to ideas.

Again, global electronic communication allows discussion and debate in an instant electronic forum. There is no better "reality check" than this.

5. A person's right to use a library should not be denied or abridged because of origin, age, background, or views.

In a public library, the little girl won't be barred from using the Internet because of her age. The ALA interpretation of the above right states: "Librarians and governing bodies should not resort to age restrictions on access to library resources in an effort to avoid actual or anticipated objections from parents or anyone else. The mission, goals, and objectives of libraries do not authorize librarians or governing bodies to assume, abrogate, or overrule the rights and responsibilities of parents or legal guardians. Librarians and governing bodies should maintain that parents - and only parents - have the right and the responsibility to restrict the access of their children - and only their children - to library

resources. Parents or legal guardians who do not want their children to have access to certain library services, materials or facilities, should so advise their children. Librarians and governing bodies cannot assume the role of parents or the functions of parental authority in the private relationship between parent and child. Librarians and governing bodies have a public and professional obligation to provide equal access to all library resources for all library users."

6. Libraries which make exhibit spaces and meeting rooms available to the public they serve should make such facilities available on an equitable basis, regardless of the beliefs or affiliations of individuals or groups requesting their use."

The Internet provides the equivalent of electronic meeting rooms and virtual exhibit spaces. Public libraries will offer access to all comers, regardless of their status.

Further, as part of the Interpretation of the Library Bill of Rights, this statement appears: "The U.S. Supreme Court has recognized that `the right to receive ideas follows ineluctably from the sender's First Amendment right to send them. . . . More importantly, the right to receive ideas is a necessary predicate to the recipient's meaningful exercise of his own rights such as speech, press, and political freedom' Board of Education, Island Trees Union Free School District No. 26 v. Pico, 457 U.S. 853, 866-67 (1982) (plurality opinion)."

Clearly, reception and sending of ideas is a First Amendment issue. Oral, written, and electronic speech must be equally protected so that democracy may flourish.

Public libraries also provide "free" services, though in fact the costs are just deferred. Taxes, state aid derived from taxes, federal aid derived from taxes, and private funds all pay for the "free" services at public libraries. Public libraries may be thought of as Information Management Organizations (IMO's), similar to Health Management Organizations, where patrons/patients contribute before they need information/health care, so that when they do need it, librarians/doctors are available to render aid.

Why NREN in the Public Library is a bad idea

On the surface, the public library looks like an excellent place to drop Internet/NREN connectivity. Libraries are veritable temples of learning, intellectual freedom, and confidentiality.

However, most public libraries lack what computer experts call infrastructure. If there are computers, they may be out of date. Staff may not have had time to learn to operate them, and the computers may literally be collecting dust.

There may be no modems, no phone line to share, no staff with time to learn about the Internet and its many resources. Money to update equipment, hire staff, and buy training is out of the question. Public libraries face slashed budgets, staff layoffs, reduced hours, and cutbacks in services.

Many of these drawbacks are noted in the recent study by Dr. Charles R. McClure, called Public Libraries and the Internet/NREN: New Challenges, New Opportunities.

Public librarians were surveyed about their attitudes toward NREN in interviews and focus groups. According to the study, public librarians thought that the public had a "right" to the Internet, and its availability in their libraries would provide a safety net for the electronic-poor.

On the other hand they felt that they could not commit resources to this initiative until they knew better what the costs were and the benefits might be. They longed for someone else to create a pilot project to demonstrate the Internet's usefulness, or lack thereof, for public library users.

The study describes several scenarios for public libraries as the NREN evolves. Some may simply choose to ignore the sweeping technological changes in information transfer. They may continue to exist by purveying high-demand items and traditional services, but they may find it increasingly difficult to maintain funding levels as the rest of the world looks elsewhere for their information and reference needs. The public library may find itself servicing only the information disenfranchised, while the rest of the community finds, and pays for, other solutions.

As the study explains:

"While embracing and exploiting networked information and services, [successfully transitioned libraries] also maintain high visibility and high demand traditional services. But resources will be reallocated from collections and less-visible services to support their involvement in the network. All services will be more client-centered and demand-based, and the library will consciously seek

opportunities to deliver new types of information resources and services electronically."

"In this scenario, the public library will develop and mount services over the NREN, provide for public access to the NREN, and will compete successfully against other information providers. In its networked role, the library can serve as a central point of contact as an electronic navigator and intermediary in linking individuals to electronic information resources- regardless of type or physical location. The public library in this second scenario will define a future for itself in the NREN and develop a strategic plan to insure its successful participation as an information provider in the networked environment."

What Should Happen

Senator Gore has proposed what has been variously called Son of NREN or Gore II, which should help address many of these infrastructure problems.

Unfortunately, the Bill was not passed and the closing of the last
Congress. There is hope, however, that it will be reintroduced this
Spring.

Specifically, Gore's bill would have ensured that the technology developed by the High-Performance Computing Act of 1991 is applied widely in K-12 education, libraries, health care and industry, particularly manufacturing. It would have authorized a total of $1.15 billion over the next five years.

According to a press release from Senator Gore's office,

"The Information Infrastructure and Technology Act charges the White House Office of Science and Technology Policy (OSTP) with coordinating efforts to develop applications for high-performance computing networking and assigns specific responsibilities to the National Science Foundation, the National Aeronautics and Space Agency, the National Institute of Standards and Technology, and the National Institutes of Health. It would expand the role of OSTP in overseeing federal efforts to disseminate scientific and technical information."

"The bill provides funding to both NSF and NASA to develop technology for 'digital libraries'— huge data bases that store text, imagery, video, and sound and are accessible over computer networks like NSFNET. The bill also funds development of prototype 'digital libraries' around the country."

The public needs NREN because 300 baud used to be fast and low- resolution graphics used to be pretty. Now we get impatient waiting for fax machines to print out a document from half a continent away, when a few years ago we would have been content to wait days or weeks for the same article to arrive by mail. We are satisfied with technology until it starts to impede our lives in some way. We wait impatiently, sure that we spend half our lives waiting for printers, and the other half waiting for disk drives. Time is a commodity.

I can envision that little girl walking into the public library with the following request: "I'm doing a school report on the Challenger disaster. I need a video clip of the explosion, a sound bite of Richard Feynman explaining the O-ring problem, some neat graphics from NASA, oh, and maybe some virtual reality mock-ups of the shuttle interior. Can you put it all on this floppy disk for me, I know it's only 15 minutes before you close but, gee, I had band practice." This is why public libraries need NREN.

We would do well to remember the words of Ranganathan, whose basic tenets of good librarianship need just a little updating from 1931:

"[Information] is for use."
"Every [bit of information], its user."
"Every user, [his/her bit of information]."
"Save the time of the [user]."
"A [network] is a growing organism."

And so is the public library. A promising future awaits the public library that can be proactive rather than reactive to technology. Information technology is driving the future, librarians should be at the wheel. It is hoped that the new Administration in Washington will provide the fuel to get us going.

_____ SIDEBAR —————————————————————————————-
Excerpts from S.2937 as introduced July 1, 1992 102nd Congress 2nd Session IN THE SENATE OF THE UNITED STATES

Mr. GORE (for himself, Rockefeller (D-WV), Kerry (D-MA),
Prestler (R-SD), Riegle (D-MI), Robb (D-VA), Lieberman (D-CT),

Kerrey (D-NE) and Burns (R-MT)) introduced the following bill;
which was read twice and referred to the Committee on Commerce,
Science and Transportation.

A BILL To expand Federal efforts to develop technologies for applications of high-performance computing and high-speed networking, to provide for a coordinated Federal program to accelerate development and deployment of an advanced information infrastructure, and for other purposes.

Be it enacted by the Senate and House of Representatives
of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE. This Act may be cited as the "Information Infrastructure and Technology Act of 1992".

SEC. 7. APPLICATIONS FOR LIBRARIES.
(a) DIGITAL LIBRARIES.—In accordance with the Plan
developed under section 701 of the National Science and
Technology Policy, Organization and Priorities Act of 1976 (42
U.S.C. 6601 et seq.), as added by section 3 of this Act, the National
Science Foundation, the National Aeronautics and Space
Administration, the Defense Advanced Research Projects Agency,
and other appropriate agencies shall develop technologies for
"digital libraries" of electronic information. Development of digital
libraries shall include the following:
(1) Development of advanced data storage systems
capable of storing hundreds of trillions of bits of data
and giving thousands of users nearly instantaneous
access to that information.
(2) Development of high-speed, highly accurate
systems for converting printed text, page images,
graphics, and photographic images into electronic form.
(3) Development of database software capable of
quickly searching, filtering, and summarizing large
volumes of text, imagery, data, and sound.
(4) Encouragement of development and adoption of
standards for electronic data.
(5) Development of computer technology to
categorize and organize electronic information in a
variety of formats.
(6) Training of database users and librarians in
the use of and development of electronic databases.
(7) Development of technology for simplifying the
utilization of networked databases distributed around
the Nation and around the world.
(8) Development of visualization technology for
quickly browsing large volumes of imagery.
(b) DEVELOPMENT OF PROTOTYPES.—The National
Science
Foundation, working with the supercomputer centers it
supports, shall develop prototype digital libraries of
scientific data available over the Internet and the National
Research and Education Network.
(c) DEVELOPMENT OF DATABASES OF REMOTE-
SENSING
IMAGES.—The National Aeronautics and Space Administration
shall develop databases of software and remote-sensing images
to be made available over computer networks like the
Internet.

(d) AUTHORIZATION OF APPROPRIATIONS.— (1) There are authorized to be appropriated to the National Science Foundation for the purposes of this section, $10,000,000 for fiscal year 1993, $20,000,000 for fiscal year 1994, $30,000,000 for fiscal year 1995, $40,000,000 for fiscal year 1996, and $50,000,000 for fiscal year 1997. (2) There are authorized to be appropriated to the National Aeronautics and Space Administration for the purposes of this section, $10,000,000 for fiscal year 1993, $20,000,000 for fiscal year 1994, $30,000,000 for fiscal year 1995, $40,000,000 for fiscal year

1996, and $50,000,000 for fiscal year 1997.

_____ SIDEBAR Resources _____

McClure, Charles R., Joe Ryan, Diana Lauterbach and William E. Moen Public Libraries and the INTERNET/NREN: New Challenges, New Opportunities. 1992. Copies of this 38-page study may be ordered at $15 each from the Publication Office, School of Information Studies, Syracuse University, Syracuse, NY 13244-4100 315/443-2911.

The U.S. National Commission on Libraries and Information Science (NCLIS) has issued a Report to the Office of Science and Technology Policy on Library and Information Services' Roles in the National Research and Education Network. The 25-page document, released in late November, 1992, summarizes the results of an open forum held in Washington during the previous summer. Topics addressed include funding NREN, charging for use, commercial access, protection of intellectual property, and security and privacy. The report "focuses on fulfilling the potential for extending the services and effectiveness of libraries and information services for all Americans through high-speed networks and electronic databases." A limited number of copies are available from NCLIS at 111 18th St., NW, Suite 310, Washington, D.C. 20036 202/254-3100.

Grand Challenges 1993: High Performance Computing and Communications. The "Teal Book" (because of its color) "provides a far-sighted vision for investment in technology but also recognizes the importance of human resources and applications that serve major national needs. This É investment will bring both economic and social dividends, including advances in education, productivity, basic science, and technological innovation." Requests for copies of this 68-page document should go to: Federal Coordinating Council for Science, Engineering and Technology, Committee on Physical, Mathematical, and Engineering Sciences c/o National Science Foundation, Computer and Information Science and Engineering Directorate, 1800 G St. NW, Washington, D.C. 20550

Carl Kadie operates an excellent electronic resource of documents pertaining to academic freedom, the Library Bill of Rights, and similar policy statements. Those with Internet access may use File Transfer Protocol (FTP) to ftp.eff.org (192.88.144.4) Login as anonymous, use your network address as the password. The documents are in the /pub/academic directory.

Further Reading

Kehoe, Brendan. (1993). Zen and the Art of the Internet: a Beginner's Guide (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall. The first edition is available for free from many FTP sites. (see below) This version has about 30 pages of new material and corrects various minor errors in the first edition. Includes the story of the Coke Machine on the Internet. For much of late 1991 and the first half of 1992, this was the document of choice for learning about the Internet. ISBN 0-13-010778-6. Index. $22.00

To ftp Zen: ftp.uu.net [137.39.1.9] in /inet/doc ftp.cs.toronto.edu [128.100.3.6] in pub/zen ftp.cs.widener.edu [147.31.254.132] in pub/zen as zen-1.0.tar.Z, zen-1.0.dvi, and zen-1.0.PS ftp.sura.net [128.167.254.179] in pub/nic as zen-1.0.PS

Krol, Ed. (1992). The Whole Internet User's Guide & Catalog. Sebastopol, CA: O'Reilly & Associates. Comprehensive guide to how the network works, the domain name system, acceptable use, security, and other issues. Chapters on telnet/remote login, File Transfer Protocol, and electronic mail explain error messages, special situations, and other arcana. Archie, Gopher, NetNews, WAIS, WWW, and troubleshooting each enjoy a chapter in this well-written book. Appendices contain info on how to get connected in addition to a glossary. ISBN 1-56592-025-2. $24.95

LaQuey, Tracy, & Ryer, J. C. (1993). The Internet Companion: a Beginner's Guide to Global Networking. Reading, MA: Addison-Wesley. Beginning with a foreword by Vice-President Elect Al Gore, this book provides an often- humorous explanation of the origins of the Internet, acceptable use, basics of electronic mail, netiquette, online resources, transferring information, and finding email addresses. The In the Know guide provides background on Internet legends (Elvis sightings is one), organizations, security issues, and how to get connected. Bibliography. Index. ISBN 0-201-62224-6 $10.95

Polly, Jean Armour. Surfing the Internet 2.0. An enthusiastic tour of selected Internet resources, electronic serials, listserv discussion groups, service providers, manuals and guides and more. Available via anonymous FTP from NYSERNET.org (192.77.173.2) in the directory /pub/resources/guides surfing.2.0.txt.

Tennant, Roy, Ober, J., & Lipow, A. G. (1993). Crossing the Internet Threshold: An Instructional Handbook. Berkeley, CA: Library Solutions Press.

A cookbook to run your own Internet training sessions. Real-world examples.

Foreword by Cliff Lynch. Library Solutions Institute and Press

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