



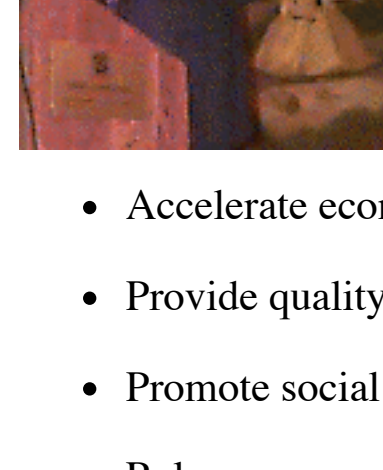
CNI Spring 1994 Task Force Meeting Summary Report

Introduction

The Coalition for Networked Information's Spring Task Force Meeting was held at the Loews L'enfant Plaza Hotel in Washington, D.C. on April 5 - 6, 1994 and was attended by three hundred ninety-two individuals. The meeting, whose theme was "Advances in Networked Information Technologies," served to highlight some of the significant developments in applications that will provide enhanced capabilities to use and manage networked information. In addition, the meeting provided a framework for understanding and analyzing National Information Infrastructure (NII) developments at the national and state levels.

State Government Networking Infrastructure and Policy

Paul Evan Peters, Executive Director of the Coalition, welcomed attendees from around the country and around the world and then introduced the opening speaker, Robert B. Adams, Commissioner, New York State Office of General Services. Adams presented his views on why networks and networked information resources and services are excellent targets for state government initiatives and investments. He noted that telecommunications has been identified as the fourth most important factor businesses consider when deciding where to locate.



Robert B. Adams (*Commissioner, New York State Office of General Services*) delivered the opening plenary address.

Under leadership from New York's Governor Mario Cuomo, the New York Telecommunications Exchange was established to strengthen the state's economic position and enhance the quality of life of the state's citizens. The Exchange brought together the public and private sectors to work on issues ranging from regulatory matters to public sector applications. The group emphasized strategies that would lead to technology diffusion to small and medium-sized businesses and also promoted services to citizens using an agricultural extension model that would reach rural, low-income, and disabled citizens.

The Exchange established some principles and goals for the state's telecommunications infrastructure:

- Accelerate economic growth
- Provide quality services
- Promote social inclusion and universal service
- Rely on a competitive market for most purposes
- Enhance the quality of life for citizens
- Foster innovation
- Strengthen democracy and individual rights

The Exchange identified a number of recommendations in its report, including developing an open network-of-networks telecommunications system, establishing a universal service funding mechanism, creating a level regulatory playing field, promoting diffusion, developing a strategy for the impact of changes on the workforce, and forming a working group for implementation of the report.

In his conclusion, Adams commented that New York has come out of this process with a broad consensus on a direction that needs to be taken, a strategy for dealing with the issues that were identified, and much support in the legislature and from many groups.

Legislative Update

Robert Gillespie, Principal, Robert Gillespie Associates and HELCIIP, surveyed the landscape of Administration and Congressional plans and activities pertaining to the telecommunications policy reform in general and the National Information Infrastructure (NII) initiative in particular. He noted that in the telecommunications arena, the stakes are very high - perhaps a trillion dollars of business will be affected by regulatory reform. He reported that education needs by and large are not being specifically addressed in the telecommunications debate. The role for higher education and libraries is small but important. He stated that we are about to change a large number of parameters and it is very hard to predict what will occur. Gillespie recommended a review in a year or two to examine how legislative decisions affect our communities.



Katherine Webster (*Sun Microsystems*) and **Alan Entage** (*Buysip Information Systems*) relax at the Tuesday evening reception.

Advances in Internet Intellectual Property Management Systems

In his introduction to this session, Paul Evan Peters noted that each of the last three Task Force Meetings have included a plenary session on some aspect of intellectual property management of networked information resources. This session explored the technological capabilities for managing Internet intellectual property as developed by four initiatives.

James Barker, Project Director, Library Collection Services, Case Western Reserve University (CWRU), opened the panel with a description of the **Permissions Manager** project, which was initiated in 1990. He described how the project was developed in response to the University President's desire to establish a new electronic learning environment on campus, including a mandate to make information resources available to students in whatever format they desired and wherever they wanted it.

The overall project perspective is to examine issues around how to manage digital materials and to understand the environment and the market. Currently they have projects in the performing arts; art and art history; paleography; engineering; law; and health sciences. They capture and catalog materials; deal with copyright and royalty management of intellectual property; and, demonstrate some academic value of having digital information available.

Permissions Manager is a client-server application designed to maintain and manage security, copyright, royalty, and permission provisions for intellectual property. Its functions include: encoding usage agreements, managing access to materials, recording usage data, producing usage reports, creating billing/compensation reports, and protecting patron privacy rights. The project will help CWRU understand what their cost models should be. Each piece of intellectual property is divided into individual elements that can be separately managed or can be managed together; each element may have separate rules (downloadable, readable, etc.). In response to questions, Barker commented that the granularity of their approach is partly dictated by the nature of the materials, especially in the humanities, where they are working with anthologies of many authors and that include visual materials. He noted that they try to embrace fair use principles and press publishers to license their materials as "library copies" rather than as course-adopted texts. At times this results in more than one CWRU license for a particular material.

Willem Scholten, Director of Computer Science and Research, Columbia University School of Law and Future Info Systems, discussed intellectual property management and the **JANUS Digital Library** project. **JANUS** is the effort to build a digital library environment for Columbia University. The project is looking not only at technology but at a philosophy of using digital materials.

The developers of **JANUS** think of digital libraries as complex systems with building blocks, e.g. storage functions, intellectual property control functions, billing mechanisms, an information retrieval facility, a collection building function, an administration function, and a user interface. In the project, users are the primary concern. The **JANUS** project will build tools to deal with a new paradigm, which is based on collaborative knowledge management. Digital libraries could become the basis for teaching and learning systems, building multi-media tools for learning. The user would interact with the digital library system through a set of tools, e.g. learning tools, simulation tools, interactive assistance tools, collaborative tools, and remote sensing database tools.

Scholten discussed the current system of copyright and fair use in terms of rights of individuals and libraries. He feels there will be a shift from an emphasis on guaranteeing the rights of an author to royalties to ensuring an author's rights to credit for his/her publications. In the transformation, he feels we will move from the competitive environment of the present to a cooperative system and eventually to a collaborative environment. He concluded that we need to build intellectual property management systems based on the collaborative model.

Marvin Sirbu, Professor of Engineering and Public Policy, Carnegie Mellon University (CMU), described his project in the context of intellectual property and electronic commerce. He indicated that commercial users are a growing portion of the rapidly expanding Internet population. To facilitate commerce in the electronic environment, his team conceived of **NetBill**, an electronic credit system to enable network-based commerce. Currently, there is no generalized Internet billing capability that can support a number of providers. The business model is one in which consumers establish an account with **NetBill** and businesses sign up for service with **NetBill**. For service providers, it provides easy access to account holders, provides a mechanism for reimbursement for small transaction fees, eliminates credit risk, offloads account management and collections, and provides support for flexible pricing. For consumers, a **NetBill** account provides access to many service providers, the convenience of a consolidated invoice, assurance that service providers can't use the individual's account to defraud, and access control, e.g. control of a child's access to material. **NetBill** provides such features as authentication, credit checking, access control, and transaction recording and receipt.

Sirbu provided a number of research issues identified in the project: authentication, non-repudiable transactions, user interface design, scalability, reliability and availability, protection of privacy, auditability, standards, flexible support for alternative pricing models, economics of information markets, and changes in patterns of information use.

At this point, the project team has built three generations of billing server prototypes. All have support for file transfer service and electronic digital library service. The first trial will be internal to CMU. External trials are planned in conjunction with the part of the **ELIXIR Digital Library Project** that includes commercially provided journal articles and in conjunction with **M.I.T.** They are also planning a **Mosaic** and **WWW** trial. Eventually, **NetBill** service provision will make a transition to a commercial financial services firm.

John Garrett, Director, Information Resources, Corporation for National Research Initiatives (CNRI), noted that his organization has been working on intellectual property management in the electronic environment for many years. He stated that for the systems that they are working with, fundamental requirements of an electronic copyright management system (**ECMS**) are that it must support thousands of libraries, thousands of rightsholders, billions of documents, millions of transactions, and millions of users. The **ECMS** must be fast and easy to use, seamless and invisible to the user, ubiquitous and inclusive, and responsive to users and owners.

CNRI is working with the Copyright Office of the Library of Congress on a project that will enable registration of a digital work over the network. As part of the project, they are:

- exploring architectural models for managing intellectual property in a network environment
- developing techniques for handling electronic rights and premissions
- demonstrating integrated distributed systems for automated management of copyright
- obtaining hands-on experience with electronic copyright management in the network environment
- working together with interested parties in the intellectual property community to understand issues and requirements.

CNRI is also conducting research on linking electronic libraries. Their project involving **Cornell CMU, MIT, Stanford, UC Berkeley, CNRI, ARPA,** and **Library of Congress** is experimenting with linking digital libraries of technical reports. **Garrett** stressed that they are finding that difficult questions will only be identified and solved by building and running actual systems. They are working on things they never thought would be problems before they began actual implementation of a system.

NII Policy

Bruce McCannell, Office of Information and Regulatory Affairs, Office of Management and Budget, and a key staffer of the Information Policy Committee of the Clinton Administration's Information Infrastructure Task Force, reported on progress that has been made on the National Information Infrastructure (NII) initiative by the Clinton / Gore administration and by participants across the country. He reviewed the Committee's *Agenda for Action*, issued in September, 1993, and reported on the state of play in the nine areas of concern identified by the Administration. Many reports have already been issued by working groups and committees working under the auspices of the NII Task Force. McCannell reported that the Administration is finding two issues most difficult in a structural sense: to what extent should the regulation of telecommunications services be left up to the states, and how should the public interest be served through regulation? He noted a concern that we generally fix problems that are happening now rather than trying to form structures to anticipate alleviating problems in the future.

Internet Audio-Visual Services

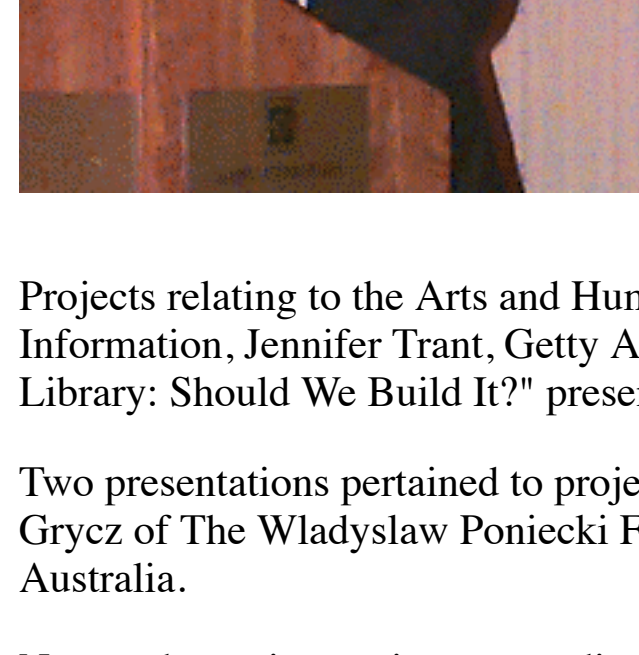
The closing plenary session featured audio and audio-visual advances in networking technology. Glenn Ricart, Director, Computer Science Center, University of Maryland, College Park, opened the session with a description of the **MBONE**, multiple channels of packet video and audio sent as a real-time multicast. **MBONE** enables institutions to run programs, such as a conference program, to distributed sites over the Internet. As a multicast, one copy of the broadcast is sent out to each registered link over the network and then is sent on to further branches, e.g. first to one state and then duplicated and sent to sites within a state. **MBONE** has intensive technical requirements; a multicast would take up around one-fourth of a T1 connection. Hardware and software requirements are also high. The first audio **MBONE** multicast was made in March, 1992 and the first video multicast was made in November, 1992. Seven Internet Engineering Task Force (IETF) meetings have been broadcast via **MBONE**. For more information, there is a FAQ file at venera.isi.edu.

Stuart Lynn, Vice President, Information Technologies, Cornell University, demonstrated **CUSEeMe** through a realtime Internet connection. There was a stir in the audience as Lynn brought on six individuals at various sites, displaying their faces on the screen and conducting a conversation with them. One participant sent an image over the network as part of the discussion. Developed by a number of individuals at Cornell, **CUSEeMe** provides low cost conferencing for everyone over the network. Lynn demonstrated the latest version of the system, which is not yet publicly available. However, current versions can be brought up on a Mac or a PC running Windows. The objectives of the project are to keep costs down, to minimize equipment requirements, and to enable users to access the system via their desktops.

Some projects using **CUSEeMe** include: a global schoolhouse, an architecture design project to design houses in Shanghai, the Exploratorium in San Francisco, which will use it with people across the nation, and a group of faculty doing collaborative research on the topic of global nomads.

Carl Malamud, Internet Multicasting Service, described his operation, the "world's first Cyberstation," which is about one year old. Based in the National Public Radio, he and his staff produce data and radio programs for the Internet. Some projects that they work on include sending out existing radio programs, such as some produced by National Public Radio, sending out National Press meeting speeches live, and producing some of their own programs, such as "Geek of the Week." They send audio data live over the **MBONE** and also send out files of audio information. Malamud noted that this is happening right now; he has hundreds of thousands of listeners.

Malamud feels that a key for successful deployment of new Internet technologies is going to be matching an available technology to appropriate applications. He feels that good programming and a willingness and ability to leverage "cheap stunts" are key. He has developed a number of innovative programs, including one that features a well-known Washington restaurant and displays visuals of the dishes they serve while waiters explain the menu. He is working with a HarperCollins audio program in which well-known poets read their own works. At the next InterOp conference, he will operate a live Cyberstation and will have reporters covering the conference. He is interested in demonstrating to businesses that the Internet can serve as a marketing tool for products.



Carl Malamud (*Internet Multicasting Service*) talks about his experience with *Internet Talk Radio*.

Malamud expects that much of the hardware needed for multicasting will be built into new equipment within the next year. He feels that as multicasting starts moving into the network, it will see a great increase in the capability to receive that data. Ultimately, he would like anyone with a user interface to be able to interact with the data he is producing. His organization is looking at a variety of ways to solve data distribution issues.

Project Briefings and Synergy Sessions

Attendees had the opportunity to select from twenty-five project briefings and synergy sessions on a wide variety of topics. Among these sessions were some devoted to Coalition-sponsored projects such as the Rights of Electronic Access to and Delivery of Information (READI) Project, moderated by Robert Ubell and Mark Tesoro of Robert Ubell Associates, and "University Presses in the Networked Information Environment," moderated by Peter Grenquist of AAUP, Colin Day of University of Michigan Press, and other representatives from participating institutions. Paul Evan Peters, the Coalition's executive director, presented a session entitled "Cost Centers and Measures in the Networked Information Life-Cycle."

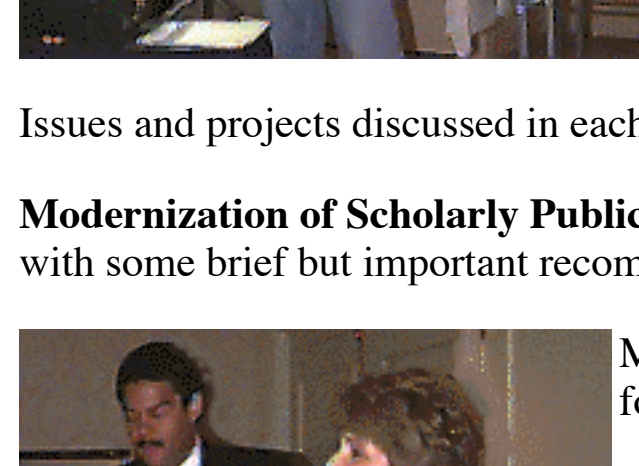
Projects relating to the Arts and Humanities included "The CIMI (Computer Interchange of Museum Information) Project" presented by John Perkins, Consortium for the Computer Interchange of Museum Information, Jennifer Trant, Getty Art History Information Project, Steve Dietz, National Museum of American Art, and Lyn Eliot Sherwood, Canadian Heritage Information Network, and "The Virtual Slide Library: Should We Build It?" presented by Paul Gherman, Kenyon College, and David Bearman, Archives and Museums Informatics.

Two presentations pertained to projects occurring overseas: "Libraries and Environmental Information Centers in Central Eastern Europe: Consortium Cooperative Agreement" moderated by Czeslaw Jan Grcyz of The Wladyslaw Ponicki Foundation, Inc. and Barbara Rodes of the World Wildlife Fund; and, "Australia's National Collection Access Strategy" presented by Warwick Cathro, National Library of Australia.

New and ongoing projects were discussed in sessions on "Agricultural Network Information Center (AgNIC)" presented by Richard Thompson, National Agricultural Library, Linda Hutchison, Iowa State University, George Strawn, Iowa State University, and Pamela Andrie, National Agricultural Library, "The Elixir Project" presented by David A. Evans, Carnegie Mellon University and CLARITECH, and Charles B. Lowry, Carnegie Mellon University, "The Computer Science Technical Reports Project (cs-tr): A Networked Library" presented by John Garrett, Corporation for National Research Initiatives, Vicky Reich, Stanford University, Greg Anderson, MIT, Marilyn McMillan, MIT, and William Arms, Carnegie Mellon University, "The NIST Virtual Library" presented by Paul Vassallo, National Institute of Standards and Technology, and Lawrence A. Welch, National Institute of Standards and Technology, "The Government Information Locator Service (GILS) Initiative" moderated by William Moen, Syracuse University, and "Application of Knowledge Management Concepts to the Interdisciplinary Area of Biotechnology" presented by Patricia Leigh, Iowa State University, Ed Stockey, Indiana University and Nancy L. Eaton, Iowa State University.

Federal grant programs were discussed in two sessions "Public Sector Access to the NII through the THAP Program" presented by Laura Breeden, Department of Commerce, and Donald Druker, Department of Commerce and "Networking Infrastructure for Education" presented by John Clement, National Science Foundation.

Two of the sessions focused on general discussion topics: "Campus Wide Information System (CWIS)" presented by Barbara von Wahlde, State University of New York at Buffalo and Richard Lessniak, State University of New York at Buffalo, and "Copyright Implications of Electronic Reserves" moderated by Paul Kobulnicky, University of Pittsburgh, and Ron Naylor, University of Miami.



Joseph Hardin (*National Center for Supercomputing Applications*) answers questions on the Mosaic Web browsing tool.

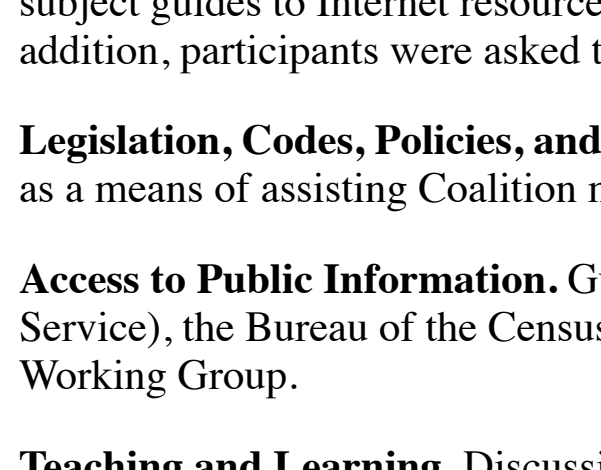
NCSA Mosaic was featured in two sessions: "Recent Development in the NCSA Mosaic Environment: The Present and the Future" moderated by Joseph Hardin, National Center for Supercomputing Applications Software Development Group, University of Illinois, Urbana-Champaign, and "Interfacing MOSAIC and Z39.50 Client" moderated by Vinod Chachra, VTLS.

Other presentations included "Data Administration in a Distributed Computing Environment: The Role of Information Policy" presented by Gerry Bernhom, Indiana University, and "Developing Infrastructure for the Virtual University" presented by Jeremy Shapiro, Fielding Institute and Shelley Hughes, Fielding Institute.

WORKING GROUP MEETINGS

Issues and projects discussed in each group are identified below.

Modernization of Scholarly Publication. Discussion focused on the draft paper on advertising on the Internet. The paper attempts to identify different types of Internet advertising, explain them, and come up with some brief but important recommendations to current and potential advertisers that will help them design advertising that best meets the needs of Internet users and advertisers themselves.



Modernization of Scholarly Publication working group leaders, **Judith Turner** (*Chronicle of Higher Education*) and **James Williams** (*University of Colorado at Boulder*), following the working group meeting.

Transformation of Scholarly Communication. Discussion focused on the status and plans of "Humanities and Arts on the Information Highways: A National Initiative." The Initiative, which is sponsored by The Getty Art History Information Program, the Coalition for Networked Information, and the American Council of Learned Societies, endorses the principle that humanities and arts voices are critical - indeed, equal to the more generally recognized interests of the sciences - in the balanced development of the Nation's technological infrastructure.

Architectures and Standards. Discussion focused on what we are learning from the TULIP project and similar efforts. A number of important prototype efforts are now underway to explore network-based distribution and access for full text and bitmapped image files. Some problem areas are coming to light, and there are also concerns about scaling. Topics included: FTP as a means of distributing files; network printing approaches; authentication; compression of files; the X window system; standards for multiple bit-mapped images; and, linking contents information, abstracting and indexing databases, and primary content.

Directories and Resource Information Services. Discussion focused on a number of recent directory and resource discovery developments by the Internet community including the new clearinghouse of subject guides to Internet resources at the University of Michigan and the continuing work by the Internet Engineering Task Force (IETF) on universal resource locators and numbers (URLs and URNs). In addition, participants were asked to discuss ways and means by which the Coalition might aid work in this general area.

Legislation, Codes, Policies, and Practices. As a follow-up to the opening plenary session, discussion focused on state and local decision making in response to the changing federal regulatory environment as a means of assisting Coalition membership in their own planning and decision-making processes and enabling them to connect to and fully participate in the NII as it emerges and develops.

Access to Public Information. Guest speakers addressed issues and activities related to federal information policy, ACE (Americans Communicating Electronically), GILS (Government Information Locator Service), the Bureau of the Census gopher, and the National Archives and Records Administration (NARA) draft regulations concerning electronic mail. A second session focused on future priorities for this Working Group.

Teaching and Learning. Discussion focused on the plans for a conference on new learning communities, formed through the integration of networking and networked information into undergraduate teaching and learning, which will be held this summer. In addition, there was discussion of the Working Group's annual Call for Project Descriptions on uses of the network and networked information in teaching and learning, which has resulted in a database of project descriptions and programs at the EDUCOM annual meetings.

Management and Professional Development. Discussion focused on the design and plans for a workshop for teams from computing centers and libraries. The two primary objectives are for participants to become more effective in working together collaboratively and to provide an opportunity to either begin or build upon existing joint efforts. A second session focused on future priorities for this Working Group.

Additional Information

Many documents from the Spring 1994 Task Force Meeting are currently available on the Coalition Internet server, which is accessible by FTP, Gopher, and NCSA Mosaic. These include handouts from Project Briefings and Synergy Sessions and discussion documents from Working Groups. The version of this meeting report in the Coalition archive will include photos taken at the meeting with a digital (Apple QuickTake) camera. As additional documents become available, they will be posted to the archive. Instructions for locating the directories are given below. In addition, audio tapes of plenary sessions are available for purchase.

```
via FTP
URL:ftp://ftp.cni.org/CNI/tf_meetings/1994a_spring/agenda.txt
URL:ftp://ftp.cni.org/CNI/tf_meetings/1994a_spring/agenda.word.hqx

via Gopher (same documents as FTP)
URL:gopher://gopher.cni.org:70/D/cniftp/tfmeets/1994a_spring/agenda.txt
URL:gopher://gopher.cni.org:70/D/cniftp/tfmeets/1994a_spring/agenda.word.hqx
URL:gopher://gopher.cni.org:70/I/cniftp/tfmeets/1994a_spring/proj_briefings
```

If you need additional information, contact:

Joan K. Lippincott, Assistant Executive Director
Coalition for Networked Information
21 Dupont Circle
Suite 800
Washington, D.C. 20036
Voice: 202-296-5098
Fax: 202-296-0984
Internet: joan@cni.org

Note on Redistribution

You are encouraged to use this *Summary Report* to provide information to interested individuals in your organization or institution by, in part or in full, posting it to institutional and organizational electronic distribution lists or incorporating it into relevant newsletters, reports, and the like. Publishers of periodicals and other materials that cover networks and networked information are also encouraged to use this *Summary Report* in similar ways.



What is CNI?	Projects	Meetings	Conferences
What's New?	Net Services	Search	Archives

CNI

21 Dupont Circle Suite 800
Washington, DC 20036-1109
202.296.5098
<http://www.cni.org>