Federal Librarians in the 21st Century: Changing Roles in the Electronic Age

Summary Report on Conference Proceedings

Wednesday, September 15, 1993
Mumford Room, James Madison Memorial Building
Library of Congress

About FLICC
The Federal Library and Information Center Committee (FLICC) was created in 1965 as the Federal Library Committee by the Library of Congress and the Bureau of the Budget (now the Office of Management and Budget), renamed FLICC in 1984 to reflect its growing information center constituency, and granted its first comprehensive Bylaws in 1991 by the Library of Congress to formalize its procedures and establish an updated organizational structure.

In the course of these changes, FLICC has established itself as the federal interagency advisory committee that provides leadership and assistance to the nation's federal libraries and information centers, which number approximately 2,500 institutions stretching from coast to coast, extending to Alaska and Hawaii, and reaching Europe and other parts of the globe.

FLICC's purpose is to achieve better utilization of federal library and information center resources and facilities through professional development, promotion of services, and coordination of available resources. FLICC is also responsible for making recommendations on federal library and information policies, programs, and procedures to federal agencies and to others concerned with libraries and information centers.

Through FEDLINK (Federal Library and Information Network), a cooperative program established in 1978, FLICC also offers any federal agency cost-effective access to information and operations support services from commercial sources.

To accomplish these objectives, FLICC draws on the resources of the federal government libraries and information centers. Under the 1991 FLICC Bylaws that broadened membership, FLICC is composed of 57 federal agency members. The 32 members designated as permanent members include the directors of the three national libraries-the Library of Congress, the National Library of Medicine, and the National Agricultural Library-and representatives of the cabinet-level executive departments and other federal agencies with major library programs. Other FLICC members include 15 rotating representatives directly elected by FEDLINK members, nine rotating members elected by the permanent FLICC members, and the chair of the FEDLINK's Advisory Council.

Volunteers from federal libraries and information centers support wide ranging FLICC programs through FLICC Working Groups which focus on federal information policy issues, education, preservation, library binding, personnel, other issues, and cooperative endeavors.

For further information about FLICC services and programs, write to FLICC, Library of Congress, Washington,

DC 20540-5100; telephone FLICC at (202) 707-4800; or fax FLICC at (202) 707-4818. FLICC also maintains the FEDLINK Fiscal Operations Hotline at (202) 707-4900 and the ALIX Bulletin Board at (202) 707-4888.

Mary Berghaus Levering
FLICC Executive Director

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Welcome and Introduction
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Constituent Services Division
Library of Congress

Price welcomed the participants and attendees to the program and introduced Curran.

Curran presented the program overview saying that, "In many ways the future is here already." Rapidly advancing and merging information technologies are setting the pace and the Library of Congress (LC) is responding. Since April the public has been able to access, through LC Online Research on Internet, more than 26 million of the Library's records. The online gateway is LC Marvel, an information system using the University of Minnesota's Gopher software. The Library did not have to "reinvent the wheel" to make this progressive service available, and neither should federal librarians. In the electronic age it is crucial that librarians work with their agencies' computer, telecommunications, technical information and records management professionals to provide service to users.

Accordingly, this conference focuses on the:

importance of establishing cooperation among information providers;
lessons learned by information resources managers;
special skills that librarians bring to the table;
ways that librarians can work with management to promote the library and information services roles; and
case studies that give concrete examples of success stories.
Last November, a Regional OCLC Network Directors Advisory Committee determined that a new breed of electronic information specialist will be required to reinvent the traditional functions of librarianship, but technology and economics will determine much of what happens. Ultimately, success in accomplishing this will require "flexibility and agility."

The Association for Information Science recently observed that voice and data communications are coming together under the umbrella of telecommunications which, in turn, is combining with data processing." Similarly, the responsibilities of the technical information searcher and the business information specialist, the librarian and the records manager, the marketing analyst and the strategic planner also are combining.

A recent issue of the Library Journal said that librarians are reacting to this scenario in many ways. Some see the resultant chaos and destabilization as the perfect opportunity for librarians to "take charge."

Curran concluded, "Perhaps more productive to the design of the new infostructures of the future will be dis-

course that examines the strengths and deficiencies of both electronic and print sources. Librarians are in an ideal position to make such examinations. They are, after all, well-suited to providing rigorous practical evaluation of both new and traditional means of communication."

Throughout the conference both speakers and attendees referred to another important factor influencing the future: the projected downsizing of federal agencies as a result of the President's initiative on reinventing government. As librarians struggle to identify the new skills and knowledge that will be needed to provide library information services in the electronic age, they also must establish the extent to which those skills, knowledge, and services are absolutely essential to the fulfillment of the mission of their agencies.

Keynote: The Information Future in Technology, Government, and Business
Ronald F. Dow
Pennsylvania State University

Dow said that if as few as five years ago you were to research the information industry, you might well have turned to one of the standard, multi-volume business directories to identify companies in publishing. Today, such a directory fails even to summarize adequately the key players, and it may well be available on a CD-ROM disk and accessed only via computer. The industry and the research tools have come a long way in the past few years. To review the information industry over the past half decade is to document a litany of change. As the information industry has changed, the expectations of information users have soared and librarians have come, more and more, to fear for their profession. The purpose of this talk is to review some of the trends that have both stimulated the soaring expectations of information consumers and served to threaten many in library positions. As we race into the future, librarians should begin to think about the position of the library in government, higher education, and industry.

Within the short lifetime of many mid-career librarians, the bibliographical publishing industry has evolved from shoe box to juke box operations. Directories, indexes, and other reference tools that used to pack the library stacks are now stacked on glass disks and loaded on compact disk drives. Local area network (LAN) wiring and favorable licensing terms can provide for simultaneous, multiple user access to these resources. Telecommunications advances make accessing these information resources, from anywhere around the world, as convenient for the user as for the librarian in the library.

Larger data files are appearing more and more frequently on the online catalogs of academic libraries. These bibliographical files provide access to the content of the collection in the same manner as the card catalog provides access to the holdings of the library. Many libraries provide dial-in or Internet access to these catalogs for the user. Other libraries are seamlessly linking their institution's catalogs to shared access systems, such as CARL, Uncover, OCLC, or RLG. Development of the Z39.50 interface is allowing users to access multiple services using a single search protocol.

In support of greater bibliographic access to information, document delivery companies are entering the information industry, providing access to the resources identified on these systems. Users no longer need to come to the library if they are prepared to purchase copies of documents from these suppliers. The U.S. Mail, fax, or even electronic delivery of the requested text can be had from these secondary suppliers without ever entering the library that provided access to the bibliographic file.

Full-text files are appearing on a number of systems developed and marketed by new entries to the information industry. Mead Data and Dialog are just a few of the companies providing user/searchers with access to the full-text of publications located on their databases.

Information consumers themselves are also becoming part of the information industry. With greater frequency, researchers are using improved technology to foster the flow of information. E-mail and listservers are providing tools for informally sharing access to information among those with common interests. A recent academic debate over Mark Twain's homosexuality was carried on over a list server. Meanwhile, scientists mapping the human gene convey their latest progress through a datafile at Johns Hopkins, and only later on the printed page. Mathematicians are debating replacing the traditional journal with electronic journals as a medium for conveying research results. Book publishers are investigating electronic books and publishing on demand alternatives while libraries, such as the Columbia Law Library, are beginning to digitize their historical collections. Additionally, computer centers are developing Gophers and other software tools to help users identify and link to these scattered information resources. Today, the information industry includes traditional publishers working in new formats, software companies, database producers, document delivery firms, and the researchers themselves, linking to the information consumer in new ways. Most exciting for the users is the idea that information, needed for work or play, can be electronically accessed at their own convenience from the office or home.

As more and more information becomes directly and electronically accessible to the end user, over systems that speak a common language, will there be a need for libraries? Surely institutional managers, confronted with the growing overhead cost of libraries and growing demands from the workforce for access to information at the desktop, will ask that question. To address the issue, library managers and librarians must identify a strong vision that clearly positions the library services they provide in a strategic fit with the organization they support. Vision can link libraries with institutional management, with information users, and with available resources and serve as a framework for decision-making as we jointly face an information-rich future.

Strategic Vision for the Library Profession
Susan K. Martin
Georgetown University

Martin echoed Dow's views on the need to demonstrate to administrators the importance of libraries and librarians and presented another example of how technology is being used to facilitate the sharing of information among those with common interests.

Martin described how librarians who subscribe to the LIBADMIN listserver have used the listserver to discuss the role of the librarian and the characteristics of the profession, particularly with the adoption of new accreditation standards. Of that group, 85 people met face-to-face two years ago to discuss how to bring a vision statement to the attention of library school educators. The discussion prompted funding from the Council on Library Resources which supported the Strategic Visions Task Force in the development of a draft vision and values statement. Martin and other members of the task force have been discussing the draft statements at various professional meetings.

People have been writing about the future of libraries, but the real issue is the future of librarians: who should enter the library profession, what librarians should expect of themselves, and what administrators should expect from librarians. Library schools have been closing in increasing numbers, and the curriculum needs to bring together practice and theory. Some advocate replacing the title "librarian" with a more futuristic term such as "information specialist."

Certification is a major issue for the library profession. British librarians have a voluntary system of "chartering" that is successful. In the United States, school and medical librarians have forms of certification. Martin sees certification as necessary to ensure a guaranteed level of service. A certificate should be "something that tells users what [librarians] are able to do for them," it should provide a level of accountability in the provision of information. Several certification models may be examined for use by the library profession. The idea

of leaving certification entirely to the state government is less preferable to governance of such a system by a library professional organization.

Martin solicited participants' opinions on whether certification is possible for federal librarians. Opinions included:

Agencies might not support the idea of spending money to train librarians for certification.
Certification is critical but should be built into the Master's program, perhaps as part of a second Master's.
For certification to work, librarians would need a standardized program which could mean involving state and federal governments.
With downsizing and the difficulty of bringing qualified people aboard, making certification mandatory will not work.
Archivists have developed their own certification system.
Martin said certification should underscore the elements of librarianship that are not only unique, but also essential in an "information age."

Communicating with Peers in Complementary Professions A Librarian Perspective
Kurt Molholm
Defense Technical Information Center

Molholm said that too often librarians have been tied up with the media and not the message. We are thirsting for knowledge while drowning in a sea of information. Finding what we need takes time and money.

Users know that the information they need is "out there." Librarians are the users' intermediaries in obtaining information. There are many new ways of gathering and delivering information. In the past, communities developed data systems to meet their own needs that were incompatible with those of other communities. Ways to bridge these boundaries now must be found. Permitting more interdisciplinary problem solving "hard" and "soft" sciences, for example, are crossing their traditional information boundaries to share knowledge.

Interest is growing in developing tools that deal with both content and context. Receiving a quantity of information without qualitative content analysis and synthesis creates information overload. The Library of Congress Congressional Reference Service has one of the best systems for information analysis and synthesis.

The Defense Technical Information Center (DTIC) has an information analysis central system that is beginning to view itself as an information utility. In this scenario, users ask the utility to provide the focused information they need.

Information specialists need both the tools to provide information to users, as well as the tools to permit users to obtain their own information.

DTIC is developing information silos that will store and deliver focused information to a particular group gathered from the electronic information universe. Through distributed architecture DTIC also is developing systems to search databases and tools to help users develop queries and conduct searches.

The summary challenges facing federal librarians are to:

improve our understanding of customers;
harmonize with our community;
increase user-friendliness and information literacy;

overcome administrative barriers;
provide information analysis and synthesis; and
support strategic information initiatives, such as electronic storage of full text and exploitation of the Information Superhighway.
Accomplishing these goals will require:

standardization for better information transfer and sharing;
development of tools for easier identification and access and for better use of the information obtained; and
increased cooperation among the generators, managers and users of information.

An IRM Perspective
Roxanne Williams
Department of Agriculture

Williams said that it is important to move beyond the concept of believing that information is "owned" by the provider and can only be delivered in the manner and time frame determined by the provider. No single organization can take total responsibility for managing or disseminating information. Technology opens information up to everyone.

It may help librarians to examine the realities of information program components from an Information Resources Management (IRM) viewpoint. They are:

Information locators. Locator task complexity ranges from responding to general requests such as "Where can I find information on -------," to specific requests such as "Deliver my selection."

Locator Inventory. Collecting metadata (data about data) to store in locators is a difficult job because those who have information do not necessarily want to reveal the fact and have to respond to questions.

User services. Librarians need to know what users need to know and be able to tell users how to find the information, tell them what it means, and determine whether the information is current and accurate.

Data centers with structured data sets. These centers must be accessible rather than hidden in PCs on an individual's desk or on a mainframe with lots of different software.

Archives. Often archival storage media are obsolescent and the caretaker is moving on.

Standards/policies/procedures. The Solomon's Policy framework addresses this topic. Locator standards are vital for interconnecting, data element standards for defining what something means and data software standards for querying a database. With too much to do and too few resources, we can succeed only by working together and taking many small steps.

A Computer Scientist Perspective
Timothy L. Gauslin
Geological Survey

Gauslin explained that from a computer scientist's point of view, the information revolution has lowered the barriers separating collections and made it possible to put all information in electronic form. Information seekers are bewildered by their inability to locate information or to find it in usable forms. Often they want to search

independently using generic skills and tools at their own desks, but information intermediaries remain important.

Major problems include determining from users' queries what from among the massive and diverse data available will be relevant and delivering information in a form suitable for its intended use. Intermediaries must determine that use, perhaps through standard forms that query the users intended application.

Computer and library scientists approach problems differently. Computer scientists take a specific problem and design a specific solution. Users, after receiving training, can work independently. In problem solving, computer scientists analyze data in advance, categorize it into fields (often predefining relationships between various tables and fields) and design structures for capturing and storing data.

Library scientists must deal with diverse collections and respond to broad communities of information seekers. They use such techniques as abstracting to categorize items, employ such tools as lexicons and often rely on intermediaries to help users in their searches. These techniques minimize the need to store data in highly structured organizations which is both an advantage and a disadvantage.

Neither group currently provides techniques to deal effectively with generalized information storage and retrieval or perform robust search and retrieval for nontextual objects.

Computer and library scientists need to cooperate in solving the problems outlined. The NISO Z39.50 information search and retrieval standard appears to provide a cornerstone for working toward devising a system whereby a user may remotely access library catalogs, traverse a variety of information resources and arrive at their desired destination in a seamless fashion.

A Records Manager Perspective
Marie Allen
National Archives and Records Administration

Allen explained that records manager stands at a vital switch- point in the process ensuring that temporary and permanent records get to the right place. The National Archives works with federal agencies in developing records schedules and approving disposition, providing guidance for federal records management and evaluating agencies' records management practices.

The rapid spread of electronic records and the equally rapid obsolescence of computer technology is of concern to records managers. A 1990 study group report "Taking the Byte out of History," said that the United States is in danger of losing its memory. By 2000, it is estimated that 75 percent of government records will be in electronic form, and it is critical that these records remain readable.

An important issue in records management is legal admissibility. Electronic records must be accurate, reliable, and trustworthy to be accepted in court. Electronic records, however, are easily altered. Several groups are working on establishing archival functional requirements for electronic records to meet legal admissibility standards and respond to this situation.

Only three percent of government records are retained permanently. Identifying the small percentage to be retained is a complex process. E-mail records, particularly those of the National Security Council, have been at the center of high-profile court cases. A task force has solicited technical solutions to requirements in recent court cases. The court also indicated the need for more written guidance, training, and inspection of electronic records.

Preservation is a problem because of the fragility of the media. Records can be erased accidentally, and new technology upon which electronic records management is based is largely unproven. The National Archives has accepted some CD-ROM applications, is expanding options for the transfer of electronic records over networks, and is studying the use of optical imaging for storage purposes.

People are debating the relevance of the continued custodial role of the National Archives and Records Administration in the electronic environment. The National Archives has neither the space nor the technology to accession very large scientific electronic systems. Some suggest that the National Archives should focus on metadata for electronic records. Finally, government in the United States is increasingly intergovernmental and federal, state, and local records managers have begun working together more closely in making records decisions.

Some find the electronic age daunting, but it offers opportunities to reinvent functions, to focus on getting information out rather than on the media on which it is stored. The real challenge for a records manager is to manage partnerships with libraries. Records managers and librarians have a common agenda, purpose, and vision. We need each other now, in the electronic age, more than ever.

Communicating with Management

Herbert White
University of Indiana

White pointed out that the electronic age has not changed the way in which librarians communicate with management. Managers still have to make decisions based on the options that librarians bring them. Nevertheless, the electronic environment has made some changes in this relationship. One is the loss of control due to the fact that an increased number of people have an input into the information process. Much of the input comes from those who know technology but do not know users' needs. People will not use technology that does not serve their needs.

Management assumed that technology would lower costs, but the greater capability created by technology prompts greater use--and higher costs. Additionally, technology may eliminate low-pay, low-level jobs, but create high-pay and high-level jobs. "There is no economy; there is effectiveness."

"Virtual library" has become a buzz phrase, but no one knows exactly what it means--perhaps it means "We can access anything anywhere." Everyone should have equal access, but providing equal access is an expensive proposition. Academic administrators suggest that a virtual library can be created by reallocating funds and that it is the managers' responsibility to find the money.

Another assumption is that libraries will require less space because they will hold less paper. This is an inappropriate assumption because it ignores the reality that people still like to access "hard copy." Technology is giving users access to more information, a lot of which is garbage. Libraries actually will require more space to store the useful information.

Self-service is an important issue. We need to consider three questions: Can users "do it themselves" without knowing the right questions to ask and without knowing what is available? Do they want to do it themselves? Is it economical for them to do it themselves?

In developing relationships with managers, librarians have to deal with what information does, not with library classification. They must strive for cost effectiveness (spending so you are better off) rather than cost efficiency

(doing dumb things cheaper). To build a better information system, it is necessary to destabilize, create a market and dissatisfaction, and then convince management to act. When the library budget is cut, librarians should innovate. Make comprehensive plans and keep management dealing with your initiatives. Otherwise you will deal with theirs. The most important thing you can bring your boss is ideas. Insist on being consulted on matters that concern you.

If you work in an organization so large that no one knows what anyone else is doing, style becomes more important than substance. Congress always creates the need for more documentation, so federal librarians will not run out of work. Become more aware of political pressures. Demonstrate the importance of what you do. “The word `library’ has no political clout; the political clout word is `information.’” Ultimately federal librarians will have to deal with a political process.

Serving Users--Case Studies in Successful Information Delivery
NRL Becoming a Library without Walls
Laurie Stackpole
Naval Research Laboratory

Stackpole is converting the Naval Research Laboratory (NRL) library into a virtual library. The library serves 3,500 federal employees and 1,200 on-site contractors on its main campus and 500 additional researchers in Florida, Mississippi, and California. The collection includes 150,000 volumes, 300,000 cataloged reports, one million reports on microfiche, 1,200 current journal subscriptions, an online reports catalog (STAR), the Microcomputer Software Support Center, and InfoNet, a campus-wide information system.

The library’s tradition of innovative approaches to information management dates back to 1935. By 1983, the library had both network and dial-in access to an integrated online library catalog. In 1989, the library established a Microcomputer Software Support Center in response to user demand for library support. The center provides lending programs for DOS, Windows, and Macintosh systems, as well as computer consultants, an evaluation lab, reference and research services, a reading room, hands-on technical advice and instruction, a help desk to aid in-office troubleshooting, and networked dissemination of anti-virus and other public domain software applications.

The center was instrumental in changing users perceptions of the library and positioning it for the electronic age. The center erased distinctions between print-based and digital information and established the library as the source for electronic information. The competencies of the library staff shifted to meet the new needs.

The library was asked to participate in a working group planning a fiber optic network, and given the mandate to develop the campus-wide InfoNet information system.

InfoNet uses off-the-shelf hardware and software and features a simple menuing system.

In June 1990, prior to establishing InfoNet, the library conducted a needs analysis that revealed users wanted desktop capabilities to: search local and remote databases; search for journal information; access other library collections; order materials during a catalog search; and retrieve full-text journal articles.

The library offers access to ASCII text, including some full-text retrieval. An image networking project in 1994 and 1995 will provide desktop access to page images. The library began working with optical technology in 1989 to save space. Using Cambridge Image Extender software, NRL has linked optically stored images to a library catalog. The optical disk system currently is available only in the library.

PTO Develops Special Library
Gerald Goldberg,
Elaine Hickey
Patent and Trademark Office

Goldberg sketched the history of the Patent and Trademark Office, described the mission of the office and summarized the patent examination process. To be patentable, an invention must be new, useful, nonobvious and fully disclosed.

The patent examination process involves an initial examination which can result in an office action (either an allowance or non-final rejection).

An applicant can then send in a response to a non-final rejection in the form of an amendment. This will cause a reexamination to take place which will result in either an allowance, and granting of a patent, or a final rejection office action. Following this an applicant can file a continuation application or appeal the examiner's decision for judicial review.

A commission appointed by the Secretary of Commerce proposed improving the examination of patents on computer program-related inventions by: improving collections of nonpatent prior art and access to that art by examiners, recruiting and retaining qualified examiners (known for a high dropout rate) and revising classifications to ensure that examiners remain current with technology. The commission also proposed a trial program to publicize and expand procedures that allow the public to cite information to be included.

Hickey explained that examiners at the Patent and Trademark Office (PTO) have a limited number of hours to do the research that will determine the allowance of the application or writing of non-final and final office action. Examiners rely heavily on the PTO library to research the literature. Some examiners use commercial databases for searches.

Examiners often have to search nonpatent literature when companies choose not to seek copyright or patent of their trade secrets. The group of examiners dealing with computer-related art had the difficult task of examining computer software applications that are protected as trade secrets not by copyrights or patents. These examiners wanted a special library that would search nonpatent literature to save time. PTO developed such a special library to provide this search access.

The library has been wired with both voice and data lines and will evolve into a network and offers nine PCs with laserprinters, three for staff members and six for patrons.

Key library services include commercial database searching with full-text delivery and transfer, CD-ROM drives for both DOS and Macintosh that are accessible through a LAN, foreign patents, and search results delivered (within 24 hours) on floppy disk or paper or via modem.

The librarian's role is to search the commercial databases or help the examiners search. Usually, examiners perform searches of American sources and the library staff members search the foreign sources. The library's online catalog includes e-mail which is used to make interlibrary loan requests. Library "runners" go to local libraries to obtain requested materials. Some libraries, including some in the United Kingdom, fax material to the library. User demand has greatly increased the use of interlibrary loans. The library staff uses Internet to locate materials in libraries and to access bulletin boards and listservers.

The library works closely with management because the library has found that people take their complaints directly to management rather than to the librarian.

Today it is critical that library staff members are comfortable in the electronic environment.

Fish and Wildlife Service Links Library Work to Agency Mission
Ann Zimmerman
The Fish and Wildlife Service

Zimmerman stressed that librarians need to keep up with their audience to survive. The Fish and Wildlife Service libraries which are scattered around the country at thirteen laboratories have one-half to four-person staffs. Until April 1993, the librarians had not met as a group since 1986.

The impetus for the meeting came from librarians having been excluded from the early planning of the National Biological Survey (NBS) which involves collection and dissemination of data, information, and technology. The planning funds papers did not mention libraries or librarians.

Librarians wanted to take part in NBS planning to help create an information system that would truly meet the needs of NBS scientists and staff. The librarians needed to share more, improve technology, and communicate with management. In six weeks the librarians planned a meeting to discuss priorities for the NBS information system. They invited librarians from other agencies and people from other departments, including information resource management.

Following the meeting, the librarians asked the NBS planning team chair to create an information task force. The librarians received an invitation to be part of the NBS information committee, and now NBS reports frequently mention both libraries and librarians. The librarians at the Fish and Wildlife Service achieved their goals by:

knowing the agency's mission and linking it to the libraries' mission and the librarians' skills;
emphasizing information rather than libraries; and
depending on allies, such as supervisors at the centers, colleagues from FLICC and Dr. Herbert White.
The librarians had to demonstrate that without their input the planning process would be flawed. Most of all, the librarians depended on themselves. They knew what users needed and established good relationships with users and managers over the years. The work is just beginning, but the librarians at the Fish and Wildlife Service will continue to link their work to the agency's mission and to help shape its future.

NOAA Uses Users
Carol Watts
National Oceanic and Atmospheric Administration

Watts said, "The future may have been yesterday, but we still need to educate ourselves--through associations, newsletters and meetings."

Most librarians do not have time to do the studies needed. It is not enough for libraries to boast that they have one million volumes. We need librarians without walls.

The National Oceanic and Atmospheric Administration (NOAA) library has been struggling to design metadata on global change. It is important to work with colleagues and to get out to find out what users need. Attending

users professional meetings helps librarians understand user needs, and creates the opportunity for librarians to explain what they do.

It is important for librarians to use their users. NOAA has many contractors, and their corporate knowledge vanishes at the end of a contract if librarians fail to require a debriefing from them. Librarians should keep working with the technology as much as their institutions will allow. Librarians should write small contracts and compete for funding against the data managers and scientists. Such an approach has enabled the NOAA library to provide document imaging this year.

Librarians should initiate both outreach and inreach in their agencies and find out how other information providers and users are working. Libraries need to share with the private sector. The NOAA library gains credibility and visibility in NOAA by dealing with the United Nations and other international groups, and NOAA field libraries accomplish much critical work with scientists. Librarians should obtain the best credentials possible. Librarian skills still will be needed in the 21st century, and librarians need to let people know that.

Panel moderator Sarah Kadec said the panelists demonstrated that success depends on meeting users' needs and enabling users to know and understand what librarians do.

Librarians need to support their agency's mission to get the support of management. Librarians must show they know how to meet user needs and be in on agency planning.

Future Roles of Federal Librarians
Robert D. Harris
Senate Rules and Administration Committee

Harris said FLICC's program on Federal Librarians in the 21st Century proved the truth of a Yogi Berra saying: "What we have before us is an insurmountable opportunity."

The President and Vice President have announced that we have no bad people, just bad systems_and we certainly have some bad library systems. If we don't attack these bad library systems, they can kill librarians.

Harris offered "helpful hints for hungry librarians":

"Try to keep your head while you are under siege." Budget reductions are coming. If your library falls under administration, try to get funding somewhere else. Librarians are likely to be among the first cut.
Stay focused on your agency's mission. Watch for changes. Agencies will lose much institutional memory as people leave. Team up with your archivist to get information from key personnel who are leaving. Find out the questions they were being asked and what information they have, including the information on their computer disks. Get their phone numbers.
Continue to be proactive. Don't sit and catalog books. Get on the standards boards. Be pushy. Be heard. Anticipate your agency's future information needs, for those needs will dictate the new requirements. Speak up for your share of the new technology. Don't settle for the castoff 286's of others.
Consult with your colleagues. Find out what the data means and how often it needs to be updated. Become the locator hub for the automated databases. Keep up on the directories.
Identify and meet your agency's movers and shakers. Find out whether the key people are getting what they need and if they are getting it from you. Remember, "If you aren't relevant, you're history."
Know what management's problems are. Step forward when you can help management with this problem. Add value and show your value so you become part of the inner management circle.

Stay abreast of your agency's technological direction. Watch funding and new legislation.
In the 21st century everyone may go through many occupational changes. Many of these changes will take place at the desk, and people will need librarians' help them to make the transition. If librarians adopt a certification program make sure it is dynamic and keeps pace with the times.

An IRM work flow profile shows gathering data, analyzing it and producing an end product. In some cases gathering is the bulk of the work, and we want to make that component as small as possible so the three activities come close together and then merge.

Today's program has demonstrated librarian's need to be more active in terms of access standards, such as the Z39.50, and to cultivate smart users. Librarians need to become information knowledge navigators who distill data into usable information. Online storage is increasing forty to fifty percent a year. The trick is getting information to users quickly. Librarians must add value or go the way of the buggy whip. Be the catalyst for learning where information is.

Take what you've learned today back to your offices and share it. Get involved with the programmatic people in your agency. Look at the issue of privacy, which is becoming a big one.

Librarians need vision, for librarians' skills in navigating through data are key to our future.