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European Research Libraries Cooperation

ERLC

The LIBER Quarterly

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The LIBER Quarterly

ERLC, the Quarterly of the *Ligue des Bibliothèques Européennes de Recherche (LIBER)*, covers all aspects of research librarianship: preservation, bibliographic control, document supply, library management, data processing, library architecture, etc. Special attention is given to library cooperation in Europe and to the comparative approach to librarianship.

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Executive Summary

In the world of ubiquitous electronic information, digital libraries will link Americans to vital information. To consider the role of the Library of Congress in the creation of a National Digital Library, a two-day conference with selected industry and academic leaders in technology was held September 1-2, 1994.

Conference participants stressed that many of the technical questions concerning digital information will not be resolved quickly. The Library, however, must begin to digitize its collections. It should begin by digitizing selected items from its Special Collections. Such an efforts is an investment in the country's future educational and technological development. Once digital collections are accessible electronically, researchers will use them, creating an even greater demand for digital knowledge. As use grows, information specialists will find new and better ways to provide access to digital collections. Eventually, all the various experiments and research will merge into a system that makes it easy for users to access and use Library of Congress collections electronically. The Library cannot wait until all questions are answered before beginning to contribute to this effort. The Library, therefore, should move ahead on projects that contribute to the foundation of the National Digital Library.

The Library of Congress must play a leadership role. The Library should push the nation's current library systems toward the future. By digitizing items at the highest level of quality possible, the Library positions itself to take advantage of future technologies. The Library should play a key role in the development of standards for digital documents. Investments in digitization will provide greater returns if goals for a digital library are shared.

Collabration is vital if a National Digital Library is to flourish. Industry experts can help identify the best technological solutions through research. They

can aid the Library in the dissemination of its collections to educational institutions across the country. Companies will benefit from the Library's digital offerings by creating products that add value to the digital items provided by the Library, creating commericially viable products.

As the digital world grows, complex questions of intellectual property rights will continue to present difficulties. The Library's Copyright Office must play a crucial leadership role in discussions and resolution of copyright issues.

The rich collections of the Library of Congress are a national treasure. By putting the most useful of them online, the Library can help share these riches with people across the nation and around the world.

TECHNOLOGICAL STRATEGIES FOR A NATIONAL DIGITAL LIBRARY

Summary of Proceedings

Introduction

On September 1, 1994, the Library of Congress convened a two-day meeting to identify technological strategies for building a National Digital Library and to define what the Library's role in those efforts might be.

The Librarian of Congress, James H. Billington, presided over the conference.

Participants included leaders in the field of digital technology from industry, non-profit, and academic organizations. Library staff who participated have major responsibilities for planning and implementing the Library's efforts to develop collections for a National Digital Library.

Finding better ways to manage electronic information is a challenge that calls for collaboration among knowledgeable corporate and government information scientists. Participants offered specific suggestions for potential collaborative efforts and spending large amounts of money on these experiments. The conferene participants dedicated to the conversation of the Library's holdings, the nation would move closer to having a core database for a National Digital Library.

Prepared Remarks

JAMES H. BILLINGTON
Librarian of Congress

Dr. Billington highlighted the benefits of a National Digital Library. His objective is to make the significant and unique collections at the Library of Congress available electronically to a broader audience than those who can travel to Washington. Of special interest are those items that further the study of American history and culture and an understanding of the nation's democratic process.

The Library does not intend to usurp the role of the private sector in delivering digital data. If private industry can provide a service, the Library will work with those companies. However, if important services that are in the national interest are not provided by industry, the Library will strive to fill that void.

The Library does intend to act as a consensus-building force, particularly in the area of intellectual property rights. The Clinton Administration's Information Infrastructure Task Force is considering the issues of intellectual property rights in the electronic world. The information superhighway needs "traffic rules." Intellectual property rights will help povide these.

The Library has begun to digitize its collections, and plans, in collaboration with other repositories, to make more than 5 million items available electronically by the year 2000. As the Library makes its materials available digitally, retrieval will present a significant challenge. The Library will explore ways to improve finding aids for digital information to enhance the retrieval of information.

Dr. Billington expressed hope that the information superhighway would reinforce the best values and productive dynamism of American society: "This emerging interactive world does, after all, engage the active mind in intellectual-calisthenics and in creative interplay with useful information." But the cargo transported on the information superhighway will greatly affect how beneficial the new infrastructure will be to society. "If the highway provides just entertainment and high-priced information on demand, the gap will probably widen between the information haves and have-nots," Dr. Billington emphasized. Americans must not forfeit the inexpensive and broad access to knowledge that public libraries and public education systems offer today, and, with the help of the new technology, can offer tomorrow.

The Library of Congress expects to routinely receive significant amounts of new material in digital form. Items such as films, music, encyclopedias, legal records, maps, scientific paper, and government documents will be stored in electronic collections. The Library also will work to digitize its most useful existing paper, audio, and film collections for electronic distribution. Dr. Billington is particularly interested in providing these electronic collections to schools and local libraries without charge or at reduced rates: "This effort has great potential to help schools achieve the high national education standards newly approved by Congress, and can help the country, we think, to come out of the educational slump that began during the 1960s."

The Library of Congress already has become a major presence on the Internet. More than 7,000 network visits are made to the Library each day. The Internet now offers access to more than 40 million Library records, including the entire Library of Congress catalog, summaries and status of federal legislation, copyright registration records, and abstracts and citations for foreign laws. The images and accompanying texts from the Russian Archives, Columbus Quincentenary, Treasures of the Vatican Library, Scrolls from the Dead Sea, and the African-American Mosaic. More than 400,000 electronic visits to the Russian exhibit alone have been counted.

The transition to a National Digital Library already has begun. A five-year pilot of the Library's American Memory project is nearing its conclusion. That project has made possible the digitization of 24 Americana collections, including prints and photographs, manuscripts, sound recordings, and motion pictures. As part of the test, 44 schools and library sites received the multimedia collections. By the year 2000, the Library in collaboration with other institutions plans to offer 5000 to 1,000 collections containing more than 5 million Americana items.

The National Digital Library is a means to provide unenhanced archival transfer of the Library's collections. Private sector entities can add value to the collections, and local groups or individuals can reshape them in meaningful ways that provide educational value. The electronic services will expose library users to new technology and old values, memory of the past and imagination for the future.

Several projects already under way are moving the Library of Congress toward a National Digital Library. They are:

- The Electronic Copyright Management System, a testbed supported by the Library and the Advanced Research Projects Agency. The project involves developing and evaluating a system for electronic copyright deposit, registration and recordation.
- The Electronic Cataloging in Publicaton project, which is testing online transmission of galleys from several publishers using the Internet. The test is designed to ease the preparation of cataloging

information and build a foundation for an electronic library of machine-readable books.

In January 1995, the Library added a major electronic source of congressional information called THOMAS; in honor of Thomas Jefferson.

CONFERENCE SESSIONS

The Bernstein Archives: The Working Collections Model for the Conference

DEANNA MARCUM / JAMES PRUETT
Director of Public Service and Collection Management I / Chief of Music Division

Digitization

The Leonard Bernstein Archives will be the first part of a digital archives of American music that the Library is creating. The digital music archives, which contain 25,000 linear feet of historical materials donated by the Bernstein family, will be available to other libraries, schools, and cultural organizations. The Library has drawn an advisory council from six other institutions with significant music collections help guide the transition of the collection to digital form. Council members are working to identify collections that will complement the Bernstein materials, and to determine the best way to digitize those materials and make them available to the public.

The digitization of the Bernstein Archives is one step in the Library's progression toward providing electronic access to its special collections. The special collections comprise 75 million of the 10 million items in the Library's collections. The public can discover many of the items in the collections only through reference librarians or specialists in those particular areas, because only a small percentage of the special collection items are under bibliographic control.

Conversion

The Bernstein Archives provide a representative sampling of the range of materials to be converted from paper to electronic from, although they are far less paper-based than other holdings in the Music Division. Participants studied samples of the collection, which includes 117 scrapbooks kept throughout Bernstein's career, date books, personal letters to family members and colleagues, pencil drafts of musical compositions, concert programs, and record

jackets, among many other special-format items. The collection presents a number of challenges to digitization because of the great variety of materials within it.

In studying the collection materials, participants questioned the usefulness of providing such material digitally without the contextual information that makes the data meaningful.

Copyright

A number of questions arose regarding restriction and origination of digitized materials:

- Once the sound recordings or the sheet music are digitized and made available on the Internet, can anybody then use the music?
- Can someone essentially use it as if it were in the public domain?
- When works are crated digitally, what constitutes the original version of the work?
- How will people distinguish between the original and the copy for preservation purposes?
- The Library of Congress has a statutory responsibility for enforcing the copyright laws and requiring the deposit of copyrighted material. But it also h as a seemingly contradictory role, which is to promote the arts and sciences by making the material available to the public as fully as possible. The Library must find a balance between access and protection.

Session I: Digitizing Multimedia Collections

LAURA CAMPBELL
Director of Library Distribution Services, Moderator

Digitization of the special collections in the Library of Congress will provide access to people who cannot travel to Washington to view the materials. About 80 percent of the special collections are housed in Library buildings in Washington, and many of the collections are unique. By offering electronic access, the Library can improve the educational and research benefits derived from these works.

During the last five years the Library has been conducting a pilot project to test methods for digitizing its special collections. Under the pilot, the Library has converted 220,000 items, including Mathew Brady Civil War photographs, early films of San Francisco before and after the great earthquake, political cartoons, and documents from the Continental Congress and Constitutional Convention.

During the tests, certain conversion challenges became clear. It is difficult to convert rare documents, because many cannot be sent through a document feeder or a book box for filming. Examples of other troublesome materials include 78 rpm records, oversized maps, and early video images. Creative solutions require time to develop, and the digitization process will not move quickly for materials such as these.

As the Library converts a large body of historical materials, some of the challenges that must be resolved include:

- Achieving a high level of productivity
- Preserving fragile artifacts
- Handling a variety of original formats
- Retaining the original
- Providing security for the original
- Verifying the quality of what is converted
- Keeping a preservation copy
- Adding finding aids and tagging to the material
- Adopting standards and developing a common method for conversion

The first goal of digitization is access, but the ways in which the public uses the information will affect the methods of storage and the finding aids that are needed. In a project at Cornell University, the staff compared usage of digital images versus digital text data from chemistry journals. Users most often chose to browse though the page images rather than the text keyed from the same, original page. This leads to questions about how library collections should be presented in the digital world. Should a page image be preserved or should access to the content itself be the primary goal. The answer is probably both, depending on the distinctive qualities of each item that is scanned into a computer system.

Access

There is great tension between providing electronic access to digital library collections and at the same time preserving them. The Library of Congress must find a balance. One participant suggested that today's generation will judge libraries by access and future generations will judge them by what they collected. The Library's goal is to provide more access to its collections while preserving them for future generations.

Costs

Digitization is costly; the Library cannot depend solely on its budget allocations to pay for the digitization of its collections; collaboration will be the rule. One participant suggested reducing library building costs by sharing the costs of digitization. Two different university libraries recently built new book stacks for about $20 and $30 per book. If both libraries owned the same book and could find a way to scan it legally and to share it, they would save storage space and cut down on future buildings costs. Such a strategy would work, however, only for books that could be destroyed because they had no artifactual value.

Some university libraries have projects under way to scan decades-old academic journals. Such materials lend themselves to digitization and destruction of the original paper copies.

Other libraries are working on developing "smart" optical-character recognition (OCR) or structured, editable, readable documents from scanned works. The Library of Congress has more than 300,000 reels of microfilm, including many presidential papers. Finding an efficient way - such as smart OCR - to convert that material to readable, searchable electronic text is of particular importance.

Another cost issue is determining whether the Library wants to spend money to clean up digital works (e.g., the fuzzy recordings offered by early sound technology). One participant suggested allowing individual users or customer organizations to clean up a work and send back the modified copy for the Library's collections. Audio tapes and artwork, for example, often have deteriorted and could benefit from restoration.

Local users also could play a role in creating specialized packages of Library information. Some are already developing very specialized CD-ROM multimedia packages in their homes. If the Library nurtured such efforts, this cottage industry could help the Library get its special collections out to the public.

Another way to manage digitization costs is to provide digitization-on-demand, much as organizations now provide print-on demand. Rather than digitize an entire collection, the Library could digitize items as requests are made. Such a strategy leads to other questions, however, such as who will play for the digitization and whether it could be performed quickly enough to meet the requester's needs. One participant suggested having a service that would require a requester to pay a nominal processing fee of say $25 for the digitization of a book on demand. A digital copy of the book also would go into the Library's collections. The costs of digitization are subsidized and the Library increases its digital collections based on usage. Obstacles to this approach include the high cost of digitizing little-used works. If the demand is low, processing fees are unlikely to equal actual digitization costs.

A similar approach would be to study usage patterns and digitize the most-used items. This approach raises questions of access, however. Would the usage of seldom used items increase if they were available over the Internet? The answer may be "yes." If so, basing digitization priorities on usage figures is misdirected.

The Library, therefore, needs several methods that work together. The first part of an adaptive, self-correcting system is scanning requested items. The second part is scanning materials that are deteriorating and have been determined to be worth preserving. Finally, a group of experts should crate a list of items in priority order for digitization. Based on the available budget, those items would then be scanned.

The consensus was that the Library needs to fund some digitization and seek alternatives to subsidize the remaining digitization process.

Cataloging

Cataloging is a major component of digitization costs. Should graphic or sound images be cataloged at the item level? If so, how can millions of items be cataloged so tht the cataloging is useful, cheap, and quick? If these formats are not cataloged, then how are they to be indexed?

Some participants' suggestions include:

- Making the graphic images available and letting users add their own ancillary data that could be used as low-level finding aids and would be distinguished in some way from those officially created by staff.
- Collaboration with telephone companies could further the goal of audiotape cataloging. AT&T's labs, for example, are working on speech recognition projects for cataloging voice mail messages so users can retrieve certain messages automatically. Such technology has the potential to be used for audiotape cataloging.
- Cooperation among government agencies that are working to develop cataloging techniques for digital libraries.

Searching

Digitizing information is an important step forward, but how will people find the information in the growing stream of data on the Internet? The digital collection of the Library of Congress must be usable and not just available. Searching tools are of vital importance in bringing these collections to the public.

As librarians and information scientists debate the best methods for searching electronic collections, it must be kept in mind that the digital document is a new entity, which characteristics of its own, including its evolution, usage pattern, interface, and demand. Searching tools must be flexible enough to change as the uses of documents change.

Session II: Organizing Multimedia Collections

SARAH THOMAS
Director of Cataloging, Moderator

The Library of Congress's cataloging procedures are based on Charles Cutter's *Rules for a Printed Dictionary Catalog* (1904). Those rules of organization may or may not be applicable in the modern, digital library environment.

The original purpose of a catalog was to enable a person to find a book by author, title, or subject, to show what a library had, and to empower a person to choose a book based on this information. The catalog worked for books and serials, but was less effective for other materials. Those other materials now can be incorporated into the digital environment. Technology can help the Library find new strategies to access such materials.

Challenges in Cataloging

As libraries organize their multimedia collections, a number of questions must be addressed:

- What technologies are available to identify, describe, and analyze digitized collections of multimedia materials?
- How can libraries reduce the human resources investment in collection analysis and in handling of materials?
- What is the value that the library expert can add to the organization of this material?
- What should the goals of technology be, and what should librarians and experts be contributing?
- Should the Library take published indexes to material in its collections and build from them?
- How can technology help the Library transcend or encompass the various perspectives of specialists and generalists who will consult the collections?

- What advances are there in the use of non-standard character sets that can increase access to materials in non-western languages?
- What organizations have similar problems?

Participants discussed the organization of collections of material such as photographs. The Library of Congress traditionally provides general access to photographs.

Few interpretations are provided. Users, therefore, must decide how photographs are to be interpreted and used.

Photographic Resources: Strategies for Searching and Public Input

The Library must determine how much involvement is needed to describe and index photographs. Photo files could be searched by criteria such as the printing medium or the subject of the photo, but most searching of photographs is best done by browsing. One participant pointed out that photo searching often involves nonverbal criteria. Photo database services provide such searching for a fee. If the Library becomes more involved in photo indexing, it might be seen as competing with this industry.

The Library of Congress generally does not try to interpret photos, but rather provides the images and lets users make their own interpretations. When the Library first created a video disk for photographs, it included 25,000 negatives from the Detroit Publishing Company with no cataloging data. Users browsed through the images, but then they wanted to know what was in the image. That created a problem. In many cases, the subject matter of photos and the categories of subjects can be identified only by the human intervention of catalogers and subject specialists. Providing the images without cataloging data or captions might not meet the needs of Library users.

The University of California's Computer Science Department is working on alternative strategies for searching massive textual databases using loosely structured queries. Use of such a strategy for searching photo collections is dependent on someone writing brief desciptions of the photographs, but it could provide an alternative indexing option.

If more indexing is needed, there are several ways to get the public more involved in the digitization process. Photos are often scanned and uploaded by individual users to the Internet. Users of these photos then upload their own descriptions of the photos, providing rudimentary material for potential searching. One suggestion is that once the Library disseminates its files, researchers could add their own comments to the photo database. Some comments would be valuable; others are likely cataloging, but could provide an alternate indexing strategy. The consensus among conference participants was

that if local input was allowed, the system should have two regions for data storage: a region with images and descriptions approved by the Library of Congress; and a region in which users are on their own and understand that the data might not be officially sanctioned.

Finding Aids

As digital collections grow, libraries will seek creative ways to use finding aids to add value to those electronic holdings. Searches are useful only if users can find the material they are seeking. Therefore, new ways of cataloging must be explored. Many of the items in the Library of Congress's special collections do not lend themselves to traditional cataloging but are best described in a few sentences with the description then searched as full-text.

As an electronic system grows, the search criteria and the success rates tend to deminish, according to one participant. The Library, therefore, must be careful about adding exessive descriptive information to be used for searches. The consensus among the participants was that if the Library of Congress could make the raw digital data available, research into new searching technologies would follow.

Session III: Navigating Multimedia Collections

HERBERT S. BECKER
Director of Information Technology Services, Moderator

As the Library of Congress moves to make massive amounts of multimedia items available over networks, it must consider the challenge these new digital collections present for navigation. Sound and image databases are particularly challenging to searchers. For example, how can a digital record be searched if it has no finding aid, structured text, or unstructured description of the record? What kind of global searching mechanism do libraries want and what kind of assumptions would they make about the dynamics that occur a search session?

Discussion during this session centered on what Library visitors are seeking. What are the expectations of the Library's digital collections audience? Studies have shown that 95 percent of the people using public libraries are browsing. At college and university libraries, 25 percent of the people are searching for known items. At special libraries, 50 percent are doing known-item searches. Because known-item searches tend to be focused, the challenge is to define the subject of an item. Users come into the Library with many preconceived notions about what they need. As their backgrounds vary, so will their definitions of the same subject and therefore the words used to search for items in a given category.

It is difficult to distinguish who the Library's users are. It is easier to define what the Library's users use. The book collections are most frequently used items; users primarily want English-language material published in the last five years. This usage pattern does not necessarily indicate the most important use of the Library's collections, however. Many quick visits account for the frequently used items, but the serious scholar mines the depths of the Library. These scholars often stay for months or years because the Library's collections are vital to their research. The Library must find a way to meet the needs of both kinds of visitors - the quick book search and the requests of the long-term scholar - and provide them with searching aids that support each researcher's needs.

One option is for the Library to support free text and structured searching, including dynamic relevancy ranking. Also, automatic clustering and dynamic classification as aids to searching should be tried. Those strategies will support people who are looking for a particular item and want to do searches that will point them to that item. For people trying to broaden their cultural understanding, interfaces that enable them to browse through the data and

choose items will be helpful. The intellectual process by which people use analogical thinking to synthesize data into knowledge must not be forgotten. People move from one subject to another when thinking or cummunicating. Similarly, electronic searching should be able to model this intellectual process.

Visual Navigation

As graphical user interfaces continue to overpower the text-only world, two-dimensional and three-dimensional viewing technologies are growing. More and more computer systems are based on point-and-click technology that lets the user navigate information visually. One participant brought up the concept of a "library in a cave". The virtual reality community has been developing the idea of a cave, where the user views presentations displayed in a three-dimensional environment. The question is: what should that experience include? Some of the features should focus on browsing, others on searching. The options for library navigation in an electronic world could go way beyond the mundane experience of viewing plain text on a computer terminal. Such creative interfaces expand the options of how students learn and how researchers find information. Libraries must consider experimenting in this area.

References to resources

As users navigate digital multimedia collections, the Library of Congress will not be the sole source of information. The Library must define a niche for itself as one of many sources of electronic information. Participants had two different visions of the Library's future role as an information guide. Some said the Library of Congress should be the first place people look for comprehensive answers. In such a situation, other libraries would feed information about their networked resources to the Library of Congress, which would act as an online directory of other libraries' holdings. Other participants felt the Library should not serve as a directory. Instead, they believed the Library of Congress should be the place users seek information after educating themselves about the options at the local level. Referral is going to be important, because a database with 10 million records is poorly set up to answer basic questions such as, "I'd like a book about Russian history", or "I need an introduction to physics". As a cost-saving measure, the Library could sent users to their local public libraries first, and let the local libraries then route them to the Library of Congress when necessary, just as it does now with written reference requests.

Technology levels

If the Library's larger goal is increased access to its collections, then it must focus on the technology level of its users and, consequently, select appropriate interfaces for its data to suit those levels. Ideally, the interface should open access to users at many technology levels. Users on the Internet probably cover four or five different technology levels; these must be taken into account. The library will have to make some tradeoffs between an interface that requires high-end hardware and connectivity, and an interface designed for an ASCII terminal and lower speeds. Sophisticated users are going to campaign for the interface that delivers the most without regard to hardware constraints, but the Library must be careful not to leave the majority of its clients behind.

The technology problem can also become a chicken-and-egg issue, one participant noted. If the Library becomes too preoccupied with the common denominator, it will not be in a position to push the state of library technology forward. Another participant added that the Library should digitize items at the highest resolution and disseminate its digital offerings using the best state-of-the-art technology possible within cost constraints. The Library could push industry to create better interface technology. The library community also must push users to get better hardware, software, and connectivity. If the Library could move slightly ahead of the common denominator, for example by using multimedia workstations with sound capability, public libraries and schools would be likely to follow and to aquire the compatible, new technology. The tangible payoff to schools and public libraries would be access to multimedia programs put out by the Library of Congress. The key is for the Library to store its data in the highest possible resolution, in a format that lends itself to reformatting and redistribution later. Aiming high does not guarantee that the resolution will be high enough. The best computer technology can become outdated in a year and a half. Libraries must hone their vision to see as far into the future as possible when choosing technology that will survive the transitions to newer and better versions. They also must choose technology that does not shut out users with older versions of systems.

The Library is aware of this tension and its sensitive to it. Obviously, within the Library of Congress, the user technology environment is controlled. But once the services move away from this controlled environment, not only is control lost but knowledge of the environment becomes sparse. Such tension may put real constraints on what services the Library can deliver via the Internet.

One resource the Library could exploit is the multimedia expertise of other organizations. Groups with digital organizational skills concerning particular collections could serve as proving grounds and educational resources for the Library of Congress. For example, the Defense Mapping Agency, the U.S. Geological Survey, and the National Geographic Society all have better map organization and digital experience than the Library of Congress. Cooperating

with others to use specialized skills and knowledge bases could save the library time and money. The Library could serve to focus the experts on a universal system for navigation of such collections.

Language Differences

The role of language has a strong effect on the successful navigation of a large database. If someone performing a search does not use the same terminology as the person indexing the material, the search might be meaningsless. Medical terminolgy is a useful example. If a query was based on "heart disease", for instance, the system might not find the reference because it was input using a more technical medical term.

The role of language will become very important because different groups will look at a library collection from very different perspectives. People will want to interact with the computer system in their own natural languages. Even if the system moves away from key-word searching and allows full natural-language navigation, the language of a particular user group must work with the retrieval mechanisms mapped into the system. Increasing access to collections will be dependent on successful retrieval using familiar language patterns.

Session IV: Custodianship of Digital Collections

MARYBETH PETERS
Register of Copyrights, Moderator

Many people have heralded the electronic age as a way to create a paperless society and cut down on the document overload. But electronic documents have spawned the ability to save multiple versions of a work.

- Since the Library of Congress is obviously a repository, what should it be collecting?
- What should it be preserving?
- An electronic environment brings out special concerns about which version of a work should be collected. An author can change a document in a moment, and then other people down the line can also change it. Where will the Library of Congress fit into this electronic environment?

Now that publishing is moving toward digital dissemintation, many works will be created electronically rather than on paper. As artists create works that are exclusively digital, what does this do to the role of the institution as a custodian of information? What happens when there is no difference between a copy of a work and the original? The work "original" will have new implications as works are created in, rather than converted to, digital form.

Copyright

Copyright law must be examined to ensure it is broad enough to cover electronic copying practices. Two issues must be considered: how does the Library manage copyright using computer systems and networks, and how does it enforce copyright law in a digital world?

The subject of scanning paper documents brings up further questions about the Library's future role. One participant suggested that libraries still will want to keep physical artifacts in addition to digital objects. For legal purposes, they will must be able to point to the original. As a record of culture, the original is essential. One participant suggested that the Library might become a registry for scanning, much as it serves as the registry for copyrights. People then would have

a central source for information on which items already had been scanned into digital form.

Royalty Payments

The issue of royalty payments must be addressed in a new way, so that authors and publishers can continue to be compensated for their work. One participant suggested that publishers are limited the number of documents they allow online because they do not want to part with their valuable products. Publishers are accustomed to getting compensated for the distribution of a work, and they are fearful that the electronic environment will make it easier for people to copy a work without payment. Many companies do not know how to deal with the rights to electronic objects, and that is impending their business. As electronic business becomes more commonplace, people will need a directory for finding the proper recipient of royalty payments. The Library is working on an electronic directory of copyright owners, but the deposit using the new electronic system is currently voluntary.

Summary Session: Steps Needed to Create a National Digital Library

JAMES H. BILLINGTON
The Librarian of Congress, Discussion Leader

The vision of a National Digital Library overlaps with many of the ideas for creating the National Information Infrastructure also known as the information superhighway. The digitization of library collections will make up one section of that information superhighway. As the Library of Congress prepares to create and contribute its portion of a National Digital Library it must articulate specific steps that will bring that goal closer.

Expert Advice

As the Library sets priorities for which items to digitize first, it must examine the goals of digitization and the audience. It also must make its potential partners aware of the subject matter that must be converted to electronic form. One conference participant suggested that the Library draw up a list of all the special collections with summary abstract descriptions and samples of the contents.

Dr. Billington said he had received a suggestion that as the Library expands its American Memory project, the data created should reflect curators' selections rather than merely data transfer. "The real value that we have to add is the curator's intimate knowledge of having worked with these collections for 30 years", he said. The online data then would be more like an anthology than a universal collection.

The Library also could make available online descriptions of the contents of collections. The availability of such synopses electronically could create further interest in the collections. Researchers would delve more deeply into the collections and request digital copies of specific works. These online directories could, in effect, serve as a menu for digitizing-on-demand.

Preservation

As the Library considers what to digitize first, one option suggested is to start with collections that are in the most urgent need of preservation because they are disintegrating. Dr. Billington pointed out that a great many materials are deteriorating at the Library (except the Gutenberg Bible, drafts of the Bill of

Rights, and selected other items, including those of vellum). If Library staff were to undertake a survey of the materials to see which collections were in the most dire need of preservation, it would take a great deal of time and could further delay the start of digitization effort.

The Library of Congress does have collections that it knows to be in critical danger of self-destructing, and digitizing those first would be helpful. But the Library has an overall plan that includes proper storage and housing, special handling of materials, and environmental controls that increase the life of objects not included in past preservation efforts.

Potential for Collaboration

The Library will need support as it makes the transition to electronic collections. Collaboration with industry could be the key to success. One participant suggested that the Library participate in video-on-demand experiments and develop a policy for making American Memory materials available to publishers who could turn them into educational media. Such a collaborate effort would increase the public's awareness of the Library of Congress as a source of knowledge. In turn, that cooperation could increase the demand for and funding of digital conversion.

Besides seeking collaboration with publishers, the Library of Congress can look to other federal government agencies as a resource for joint efforts. Digital library research projects are under way at the National Science Foundation, the Advanced Research Project Agency, and NASA. Other potential partners for collaboration include leading research and industrial organizations, state and local governments, and public libraries and school systems.

Specific collaborative opportunities that participants suggested include:

- Working with telephone companies on speech compression and recognition projects that could be applied to audiotape collections.
- Joining with a computer company in a project to make Library collections available electronically to an entire school district.
- Asking a telephone company to provide a toll-free number so elementary school children could call up and request digital files. Other corporate sponsors or volunteers could help digitize the materials and send them back to the elementary sudents.
- Working with teachers, textbook developers, and coursework designers to stimulate use of digital library materials in K-12 classrooms.

One participant suggested that more money should come from congressional appropriations. Just as the budget allowed for the creation of the Library's physical buildings, it could pay for the digital infrastructure. More funds will be needed to make the shift "from warehouses to disks, from corridors to networks."

Visual Interfaces

The creation of a National Digital Library provides the opportunity to take the collections of the Library of Congress out to people on other parts of the country. But along with the collections, the Library's physical space contributes to the learning experience. One participant suggested taking the physical place out to the public as well. The Library could do that through visual interfaces that allow a user to navigate through rooms and collections in the Library buildings. Such an interface would help the user understand how collections are organized in the Library and might help them find the people most qualified to answer their questions.

Visual information would capture the attention of Library users and make them more interested in exploring the Library's collections. "The more personal the experience is, the more rewarding a place it is to go", a participant said. Dr. Billington noted that the Library is planning a rotating exhibit of the treasures on the Library of Congress. As the Library moves toward a digital service environment, he said, he hopes it also can become a place that more of the public can relate to and "see" electronically.

Finding Aids

One of the benefits of the Internet and global digital environments is that a user can get access to large quantities of information from many different sources while sitting at one computer. The big problem that arises is how to find that information when the network is overloaded with files about so many different subjects. Many people say the solution would be having the Library of Congress act as a pointer to information in libraries across the country. Dr. Billington, however, questioned whether that was an appropriate role for the Library. Should the Library of Congress be a finding aid for "what's in everybody's attic and every company's archives, what's in every studio's vaults, etc.?" he asked.

If Library officials decide that is an appropriate responsibility for the Library of Congress to take on, what steps would be needed? Should the Library of Congress actively set up a system for gathering and indexing the information about other organizations' holdings? Or should the Library step back and let user need and the system evolve on their own? In one case, the Library would be passively storing bits, and in the other it would provide professional indexing

services. The consensus was that the boundaries between those two scenarios are fading. The Library will have to be flexible and find a middle ground between the two extremes.

Standards

If the Library of Congress is to be a leader in the building of a National Digital Library, it must help push for standards in the quality and processing of digital collections. The Library is not in a position to define the technical standards, but rather to push for a consensus on digitizing at the highest quality level. The consensus among participants was that the Library of Congress is in a good position to promote standards for digital interchange of information.

Where to begin

Dr. Billington asked participants what steps they thought the Library needed to undertake immediately to begin the creation to a National Digital Library. Participants said the Library of Congress should:

- Start building its digital archives.
- Strive to collect a breadth of examples of the history of America.
- Focus on a few important applications for digitized material, such as use for K-12 education, assimilation of information, and archiving.
- Set a high-quality standard for digitizing.
- Set a deadline for requiring digital copyright deposit of new material.
- Exploit the knowledge of Library staff in selecting components of the special collections for digitization.
- Develop three or four models of a digital library based on what is important in terms of policy and intellectual property considerations.

Dr. Billington and other library officials will consider these suggestions as the design for building the National Digital Library progresses.

Conclusions

The Library of Congress will be a leader in the design and implementation of a National Digital Library, but it cannot build such an ambitious infrastructure alone. Collaboration with other libraries, federal agencies, private partners, and educational institutions will be key to the success of the project. This conference

unearthed meaningful opportunities for collaboration and important matters for further consideration.

The areas that will require focused attention include:

- Standards for the creation and dissemination of digital library collections.
- The quality level at which Library materials are digitized.
- Funding for conversion of holdings to digital files.
- The limits of current technology and the potential for future advances.
- Strategies for collecting digital items.
- The development of new organizational techniques for digital collections.
- The creation of advanced navigation techniques for electronic collections.
- Intellectual property rights in a digital world.
- The potential for educational and research benefits from electronic collections.

As Dr. Billington and other Library officials imagine the libraries of the future, they will ponder these challenges and work to make the National Digital Library a resource for people across the country. The Library of Congress then truly will become "a library without thout walls".

Appendix

Conference Participants

From Industry:

Daniel Atkins	Dean, School of Information and Library Studies, University of Michigan
Greg Blonder	Director Materials and Technology Integration Research, AT&T Bell Laboratories
Tony Dahbura	Motorola Cambridge Research Center
Bran Ferren	Senior Vice President, Walt Disney Imagineering
Henry Gladney	IBM Research Staff, Almaden Research Center
Sandra Gordon	Project Coordinator, Massachusetts Institute of Technology
Kris Halvorsen	Principal Scientist Laboratory Manager, Xerox Palo Alto Research Center
Michael Hawley	Assistant Professor of Media Technology, Massachusetts Institute of Technology Conference Co-Chair
Joe Hill	Electronic Data Systems Research
Robert Kahn	President, Corporation for National Research Initiatives
Butler Lampson	Digital Equipment Corp., Cambridge Research Lab
Michael Lesk	Executive Director, Bellcore
Clifford Lynch	Director, Library Automation, University of California
Dave Ricci	Director, Research Services, Hewlett-Packard Laboratories
Greg Riker	Director, Advanced Consumer Technology, Microsoft Corp.
Robert Sproull	Vice President Sun Lab, Sun Microsystems
James Young	Assistant to the Chairman, Electronic Data Systems Corp.

From the Library of Congress:

James H. Billington	The Librarian of Congress
Herbert S. Becker	Director, Information Technology Services, Office of the Librarian

Laura Campbell	Director, Library Distribution Service, Constituent Services
Hiram Davis	Deputy Librarian of Congress
Deanna Marcum	Director, Public Service and Collection Management I, Collection Services
Rubens Medina	Law Librarian
Marybeth Peters	Register of Copyrights
James Pruett	Chief, Music Division
Winston Tabb	Associate Librarian for Collection Services
Sarah Thomas	Director, Cataloging Collection Services
Suzanne Thorin	Chief of Staff, Office of the Librarian
Robert Zich	Director, Electronic Programs Office, Cultural Affairs Conference Co-Chair

European Research Libraries Cooperation:
The LIBER Quarterly, 5 (1995), 145-181.

The National Digital Library

Digitization at the Library of Congress

SUZANNE E. THORIN
Library of Congress, Washington D.C.[*]

I am delighted to share with you where we at the Library of Congress are in our plans to digitize some of our significant collections and make them available electronically. I want to emphasize that we are presently in a planning stage. We very much want feedback from individuals and from the various groups with which we are consulting as we plan our program.

As librarians, most of you here know that the Library of Congress' historic priority mission is to serve the Congress of the United States. After the Copyright office was created in 1870, the Library of Congress became the repository of record for the whole range of American creativity with the implied mission to preserve and share it with the American public. We have done this primarily by having 22 reading rooms open to the public in our three buildings on Capitol Hill in Washington, DC. Now, with the electronic universe - the subject of this conference - we are in the midst of exploring what an electronic library should be, what James Billington, the Librarian of Congress, calls a National Digital Library. He believes that this is the way the Library of Conress should serve the American people in addition to the Congress and the government and the specialized scholars that it has always served.

In his opening remarks at a Conference on Technical Strategies for a National Digital Library at the Library of Congress on September 1 and 2 of this year, the Librarian spoke of three special obligations that the Library has by statute and by tradition:

> "First is the role of content provider. We want to make electronically available to a broader audience our significant and unique collections, particularly those that are important to the study of

[*] The present article consists of two presentations by Suzanne E. Thorin on the National Digital Library Project. The first was given *OCLC Users Group* on October 3, 1994; the second at the *95 FLICC Forum* on March 24, 1995. Appended to this article there are a number of illustrations [H.S].

> American history and culture and to the understanding of our democratic process. As the Library of Congress, in effect the national library of the United States, we do not want to do anything that the private sector or anybody eles can do or is likely to do, but we do not want to fail to do important things that others may not do, but which are in the national interest of the United States."
>
> "Second, we want to help resolve the complex issues of intellectual property rights in an electronic environment. We run the Copyright Office and copyright form the core of the Library's collections."
>
> "Third, we want to explore using the broad knowledge of our expert staff and our history of setting bibliographic standards to contribute to finding new ways to retrieve information in digitized form."
>
> "We need you help to ensure that we ...[can] reach out to people across the country with information and knowledge that will increase the productivity and civic health of this society."

The September/October 1994, issue of the *Educom Review* contains a brief article by Dr. Billington which is a summary of his remarks at the Fifth Roundtable in Multimedia held in Marina del Rey last April. He notes here that television was trumpeted at its inception as being a vehicle that would vastly enhance education, bring culture and the arts to everyone, and create a better informed, more engaged citizenry. The reality, he notes, has been less than impressive. Except as a marketing device and a family babysitter, it [television] has not been widely touted, eben by its practitioners, as an 'engine of American progress.' "

The same issue of the *Educom Review* contains a brief article by Langdon Winner, called "The Virtually Enhanced." Dr. Winner, who teaches at Rensselaer Polytechnic Institute, describes the financial state of universities which, in part, has led to the use of technology to replace interaction with a real professor. He relates a colleague's story where students in a college history class did not know the historical figure after which Martin Luther King, Jr. was named, nor had they heard of the Reformation itself. He then comments on the depth of information available to students electronically. "The new, widely heralded educational software presents more glitz than substance. In theory, computers should allow wide-ranging exploration of mountains of information. But every hypertext treatment of a subject I know in detail - music, for example - proves to be extremely superficial. The amount of work needed to create software that allows a truly open-ended search for knowledge is just not being done." He concludes by noting that although multimedia is flashy and impressive, it lacks substance. "If students and their parents ever hatch on to this educational bait and switch, they could - and should - revolt in anger. Rather than feed students more of the

eletronic frosted flakes that filled their childhood years, universities must provide genuine intellectual nourishment."

At least some of the new Information Superhighway has been paved or at least planned. One burning question, however, has not yet been adequately addressed: what will the cargo be that is carried on the highway? In addition to movies, video games, home shopping, and banking services, will we end up with intellectual material at all, and if we have some material available, will it be lacking indepth and context, as Dr. Winner noted.

On September 30th of this year, the Library of Congress ended a five-year pilot of our American Memory project. This effort, with its production of 210,000 digitized images, has enabled us to visualize a real national digital library, one that would contain entire collections of materials from libraries across the country and abroad. In the American Memory Pilot Project, we digitized two dozen American collections, including prints and photographs, manuscripts, sound recordings, and motion prictures. American Memory has been tested in 44 schools and library sites around the country and is being further tested this year in several different delivery modes. In fact, six collections are now available via the Internet.

Neither Dr. Billington's initial idea for an "American Memory" nor our plans for a National Digital Library exclude the need for access to books or for teachers and librarians to be intermediaries or knowledge navigators. In fact, we believe that books are pretty much here to stay and that teachers and librarians are integral in most cases to learning. A reporter from the *Washington Post* recently asked me when I could envisage a student sitting in a cornfield in Kansas working with just his or her computer - in which I assume she meant would be stored the sum of human knowledge. I explained to her that a National Digital Library - at least the portion that will contain historical collections - was not a stand alone system, but would be complementary and integral to materials already found in libraries, many of which are underused presently.

She is the second reporter from a major newspaper who is writing about the Library of Congress' digitizing plans. On September 12, 1994 the *New York Times* published an article by Peter H. Lewis entitled, "Library of Congress Offering to Feed Data Superhighway." For the most part the article was accurate. On October 13, we will announce the first major grants and gifts that will help support our digitizing program. Before describing that program in more detail, let me digress for a moment to place this digitizing program in the full context of the Library's overall digital efforts.

Our library - like your library - is seeking to exploit technology to enable us to meet goals better and faster. At the Library of Congress we completed a strategic plan more than a year ago that will take us into the next century. We have been timely in meeting our goals thus far. As you might suspect, however, much of our future is dependent on how well we are able to use technology. The strategic plan

helped us paint a big picture, but as we look at the future we face significant challenges. For example, we must upgrade or find alternatives to our big legacy mainframe systems and complete our local area networks in order to be able to reach our goals. Like you, we are connecting staff to the Internet and finding ourselves needing to write Internet policies; we are experimenting with new, better and more efficient ways to catalog; outfitting our reading rooms with up-to-date technology; raising and spending private money: seeking to serve our constituents better through digital technology; opening a Digital Library Visitors' Center to create public support for our programs; reopening two major buildings that have been renovated; beginning a consumer product program; coming out with the first issue of a new magazine called Civilization; meeting the goals we established in our arrearages cataloging; devising plans as to what books and special collections we will send to our secondary storage site as well as how we will locate and retrieve them; implementing an automated financial management system; and working to create an efficient and fair employment system and a climate that is welcoming to people of all backgrounds.

Inherent to meeting each our goals and to making our programs successful is the need to use the right technology and to use it productively. A little more than a year ago, Dr. Billington assembled a Digital Library Coordinating Commitee whose charge is

> 1) to recommend long-term strategic directions, priorities, and resources for the Library of Congress in the digital age;
>
> 2) to coordinate ongoing and anticipated projects and experiments to ensure that efforts benefit the entire institution and make optimal use of limited resources;
>
> 3) to support more effictive working relationship with outside groups engaged in major initiatives and ensure that there is a common vision of the Library's objectives;
>
> 4) to develop an ongoing institutional capability for staffing special efforts. For the first year, Jan Bortnick Griffith and Robert Zich steered the work of this group of managers from across the Library, which reports to the Library's Management Team, now headed by our Deputy Librarian, Hiram L. Davis.

One of the products from this commitee was a white paper called, "Strategic Directions Towards a Digital Library," which outlines a number of critical institutional issues. This paper was circulated widely internally and to some externally prior to its being referenced in the *New York Times* article. It also paints the first broad picture of the Library's digital plans. Early drafts of the paper did *not* reference the project to make significant historical Library

collections available electronically, because we were ending our American Memory pilot and new plans were only beginning to take shape. The paper changed considerably from the first draft to the current one now being circulated for final comments. I mention this here because we have been working hard in the past few months to define the Library's proposed contributions to a National Digital Library through a National Digital Library program and to differentiate this program from *and* relate it to the Library's other digital programs. At the time the paper was referenced in the *New York Times*, it was still circulating for comment. It will be a centerpiece for the Library's Management Team retreat in November where the rubber will hit the road when limited resources begin to be matched to programs.

So, what I am here today to describe is not the 26 million records we now have available on the Internet; nor the digital images and accompanying texts from our major exhibitions nor the summaries and status of federal ligislation, nor the abstracts and citations from foreign laws, all available electronically. Not even our testbed being created with ARPA and CNRI to develop and to evaluate electronic copyright deposit, registration, and recordation concepts and issues in an electronic environment. Nor our electronic cataloging in Publication (CIP) project which is testing online transmission of galleys from several publishers over the Internet to facilitate the preparation of cataloging information and to establish the foundation for an electronic library of machine-readable books. Not even our various digitization activities that directly support the work we do for the Congress. Except that all of you know that in the big picture all of these projects relate to one another and support the overall content of a National Digital Library.

What I do want to describe in a little more detail is our program, which is primarily supported by private funding, to supply crucial educational and cultural content to the National Information Infrastructure by digitizing certain historical collections. We want this program to enable the widest possible public access to the knowledge and information that is most important for educating and enriching a free society. We seek a unique cooperative network that would draw on the rich materials in all formats at the Library of Congress and other institutions to provide important cargo for the information Highway - including books, pictures, maps, films, and music, as well as services that will make these materials easily accessible to anyone who has access to a library or a computer. We want to offer the American people a chance to explore remotely this country's cultural and historical resources through words, images, and sound.

The Library has set the following initial goals in its digitization program:

- To digitize unique parts of the Library of Congress' collections that will play an important role in supporting the information needs of the Congress and in the study of American history and culture so essential to the understanding of the democratic process.

- To work with copyright users, copyright owners, and others to sesolve the complex issues of intellectual property rights in an electronic environment.

I described earlier the Digital Library Coordinating Committee, the Library-wide group that looks at all our endeavors. I now head this group for the Librarian, who wants a direct connection from his office.

For the privately supported digitizing program, we have assembled a subgroup to plan and implement our goals and objectives. We have four core team members: 1) myself - I am the administrative head responsible for overall coordination and implementation, for outreach, for fundraising with our Development staff, and for publications about the program; 2) Laura Campbell - she is the production manager, who, with her team, is responsible for digitization, for systems architecture, and for resolving some access issues; 3. Deanna Marcum - as Director of our Special Collections, her staff will prepare most of the materials for digitization. Dr. Marcum is also heading up our effort to develop a list of materials that librarians, archivists, and historians believe should be digitized; and 4) Herbert Becker - as Director of our information technology services, Mr. Becker is responsible for providing the technology base to carry our digitized materials through our internal systems and outside to constituents across the country and abroad. As we address copyright and cataloging issues, we add the Register of Copyrights, Marybeth Peters or Mary Levering, the Associate Register for National Copryright Programs, and Sarah Thomas, our Director of Cataloging.

Where ist the planning process? We are still in the process of consultation, and, at the same time, we are working toward completing a draft operational plan.

Consultation process

You have as a hand out a listing of consultative meetings with the library community, technical experts, possible financial supporters, and users. Our kick off was a policy meeting held in July, 1993, with the opening address being given by Vice-President Gore. (Copies of the conference proceedings have been published by the Library.) Last month we held a most productive meeting with technical experts from the University of Michigan, AT&T Bell Laboratories, Motorola Cambridge Research Center, Walt Disney Imagineering, IBM, Xerox, MIT Media Center, CNRI, Digital Equipment Corporation, Bellcore (Michael Lesk, who is with us today, represented Bellcore), University of California, Hewlett Packard, Microsoft, Sun, and Electronic Data Systems. We hope to have informal summaries of these proceedings available in time.

We will be meeting individually with foundation executives over the next few months.

At the same time that Sarah Thomas assembles her first meeting with cataloging experts, we will celebrate the opening of our new Digital Library Visitors's Center with the announcement of our first private funding support that I mentioned previously. Later in October Duane Webster and his staff have been kind enough to let us add a session to the forthcoming ARL meeting, so that Deanna Marcum, Winston Tabb, and others of us from the Library can consult with librarians whose institutions are potential contributors of historical and cultural collections to the National Digital Library. Our meeting with corporate executives will take place toward the end of January, 1995.

Planning

Specifically, our operational plan will seek to

- Define the initial target group - our "customers"
- Determine customer requirements and to define products to meet their needs
- Establish measurable project goals, timetables and milestones
- Define critical sucess factors
- Select distribution channels
- Establish priorities for digitizing the collections materials
- Design the system architecture
- Select delivery media
- Select resolution standards
- Define roles and requirements of value added suppliers from the private sector.

In doing this, we have made some assumptions:

1. The resolution of the electronic copyright issues is difficult and likely to take several years. Although we will construct a number of pilots to test various licensing mechanisms in the electronic environment, for this program we will be using public domain materials.
2. Public domain materials in the Library's collections consist of primary source materials of historical significance.

3. Digitizing technologies will continue to improve at a rate similar to that experienced in the past; these technologies will enable increasingly finer resolution of digitized visual material.
4. Limited funding will be available to digitize the Library's collecitons. Therefore, prioritization of digitization of available items is essential.
5. User feedback will be gathered and employed to "true-up" the digitization priorities.
6. Other research libraries and institutions will contribute collections.
7. The Library will be able to enlist the support and advice of nationally recognized experts from government, private industry and adademia to assist the us in critical aspects of the project.
8. The Librarian has established the National Digital Library as a high priority project and will allocate the resources required to implement the project successfully.
9. The national information infrastructure will develop slowly and steadily over the next decade.
10. The Internet will continue its rapid growth, and access will become more "user friendly" of the general public as on-line services provide Internet access, simple interfaces, and improved navigation aids are developed.
11. The Congress will continue to give its support to the Library in undertaking these efforts.

Additionally, we have completed the first draft of our staff needs assessment and our 1995 budget which we will share in a more final form with the Librarian, the Management Teams, our Congressional committees, and others after that.

In closing, the critical role of libraries has been recognized in the Administration's "NII: Agenda for Action," which calls for linking all schools and libraries to the National Information Infrastructure by the year 2000, which also happens to be the Library of Congress' 200th anniversary. We will work the Administration, other government agencies, and support groups to ensure that the needs of libraries are addressed, and the Library of Congress will contribute to answering critical public policy questions, such as protecting intellectual property rights and developing standard retrieval architecture for electronic information. Today, I ask you as colleagues for your support and feedback. We believe that for the first time the Library of Congress will be able to share electronically with the American people at least some of the materials that we have collected for all of us to document the history of this great country.

We are present at the creation of enormous possibilities and challenges, a fantastic time as Mr. Toffler noted earlier. Along with others, libraries in general and the Library of Congress in particular can and should be a powerful force for a national renaissance in this Age of Information.

The Library of Congress is alredy receiving and organizing vast amounts of new material in already digitized form: films, music, encyclopedias, legal records, maps, scientific papers, government documents - all kinds of data. For preservation purposes, we will get periodicals and books in digital as well as paper formats. At the same time, the Library, alone or in joint ventures with the private sector, will be digitizing some of its most useful already existing paper and film collections for dissemination via the electronic highway to local libraries and schools where people, rich or poor, will have access to on-line services either free or at reduced fees negotiated collectively with the providers.

This effort, properly organized and supported, can have enormous positive results. As we see it, the effort to set high national education standards, newly approved by Congress, and to come out of the educational slump that began during the 1960s will increase the demand for the local access which the new technology can provide.

The Library of Congress is moving in the direction by helping others lay the groundwork for the network of the future: the National Information Infrastructure - which eventually, as Vice President Gore noted earlier this month, should develop into the Global Information Infrastructure. We are involved - and will stay involved - in the vital work of the Administration's National Information Infrastructure program. Indeed, we have always supported the proposed link-ups between the Information Superhighway and the nation's schools and libraries. We are not in the highway construction business but we have a keen interest in where the highway goes and who gets access to it and to the cargo we put on the highway.

The Library of Congress is enriching the existing network by becoming a major presence on the Internet. We now provide free over the Internet more than 40 million records including the entire Library of Congress catalog; summaries and status of federal legislation; copyright registration records; abstracts and citations from foreign laws.

You may have read about or used our latest venture, THOMAS, an on-line, one-stop resource about the workings of the U.S. Congress, which had its debut on January 5, as a Congressional initiative. We have since logged in well over 2

million inquiries on THOMAS and its database now includes bills from the 103 and 104th Congress and the Congressional Record.

The Library of Congress is the only institution to make available electronically the images and accompanying texts from all its major exhibits so that they can have a continuing educational impact: Secrets of the Russian Archives, Columbus 1492 Quincentennial - Meeting of Old and New Worlds, Vatican Library Treasures, Dead Sea Scrolls, and the African-American Mosaic.

Over 7,000 people log on to the Library of Congress files over the Internet each day; the Library's staff has designed an easy-to-use menu system (LC MARVEL) accessing LC information and connection to other resources on the Internet; and the Library is continuing to build new tools to improve access to our resources over the Internet and to make additional materials available.

Even more important for the long run may be the foundation content that we are creating for a new National Digital Library. During a five-year test of our American Memory Project we have digitized two dozen American history collections including prints and photographs, manuscripts, sound recordings, and motion pictures. The best known items may be the Mathew Brady Civil War photographs and our turn of the century movies of immigrant life in New York City. American Memory has been tested in 44 schools and library sites around the country, and a number of its collections are now up on the Internet.

American Memory is designed to bring the values of our older book culture into the new electronic culture. It will provide what Jim Billington, the Librarian of Congress, calls a vitamin enrichment for hard-pressed schools and libraries. Teachers will mediate the materials, and young people will get motivated to delve into books in order to answer the questions they themselves ask of the documents and photographs and films they call up on the screens.

In delivering such materials by electronic means to libraries and schools, we seek to reinforce local communities of lerning rather than just to supplement the home entertainment center - to be a benevolent wholesaler for the local institutions which will retail knowledge and information to students, teachers, and the public. When a digital delivery system is in a library, users are drawn back to books rather than pulled away from them.

The National Digital Library will provide substantive content - the high-value cargo - for whatever form the Information Superhighway may take. It is being developed in collaboration with the private sector and with materials from other major depositories. The Library's vast existing collections, which are largely based on copyright deposits and include some 107 million items, will provide the base. Core materials for the National Digital Library will be taken from Library of Congress collections that include most papers of most Presidents up to Herbert Hoover, cartoons, photographs, posters, television tapes, almanacs, recorded sound, sheet music, unpublished American plays, in addition to the largest book and periodical, map and film collections in the world.

One key to the whole enterprise of providing content, as we see it, is private-public partnership. With our American Memory digitized collections as the core, the Library is now in the business of digitizing unique documents, photographs, prints, sound recordings, and motion pictures that tell the story of America from its beginnings through World War II. We are in contact with educators and librarians to determine which primary sources are worth digitizing and disseminating for their purposes. By the end of the initial five-year launch period, we plan to have up to 5 million American history items from the collections of the Library of Congress - and from other institutions - accessible either on-line or in CD-ROM all over the country.

Digitization, as everyone in this room is well aware, is very time consuming and expensive, particularly for materials that require special handling. But we as you are seeing constant progress in the technology and are confident that as we move ahead the costs will continue to decline.

Even so, the National Digital Library effort must be a cooperative effort. The Library cannot do it alone; we are cooperating with other repository institutions. The Federal government cannot do it alone. The private sector must be engaged. In order to meet the goal of five million items by the year 2000, we have requested $15 million from the Congress and an additional $30 million from the private sector over the next five years - in addition to the $13 million in private funds already committed.

The Library plans to provide access to the basic documents - the "plain vanilla" or archival version. Librarians and educators may wish to refine these materials for their own purposes. Private entrepreneurs may wish to add other ingredients to our plain vanilla and package the product for sale. We hope to enter into joint ventures with private companies to digitize and develop some of the collections, but we will grant no exclusive rights to our materials to anyone. Indeed, the low prohibits us from doing so, even if we wanted to.

So, as we do with our printed materials, we welcome partnership and joint ventures in the electronic sphere, always with the goal of enhancing public access to the Library's collections.

We are well aware that part of the genius of the new networked world lies in its decentralization. But the National Digital Library, linked to the Library of Congress, will still have a critical function to perform. It will be the permanent home for files of digital resarch data that would otherwise disappear. In time, most files mounted by commercial services will lose their money-making value, and those files having permanent research importance must find a safe home accessible to all. The National Digital Library will offer such a home. Scholary institutions will sometimes shift interest or lose resources and need to remove valuable files from their networked computers. These files too would find a place in the National Digital Library, along with the accumulating electronic collections

derived from the Library's traditional collections. This archival function fits well the mission of the Library of Congress as the American library of record.

The Library intends to play a leadership role by developing new approaches to organizing, managing, and preserving digital materials; creating necessary procedures for protection of intellectual property; and acquiring resources to convert current collections to digital formats.

Several projects already underway are building the foundation for doing this:

- Our Electronic Copyright Management System, is serving as a testbed to evaluate electronic copyright deposit, registration, and recordation concepts, and issues
- Our Electronic Cataloging in Publication (CIP) project is testing online transmission of galleys from Harper Collins and seven university presses over the Internet to facilitate the preparation of cataloging information and establish the foundation for an electronic library of machine-readable books.

There is no question in our minds that protection of intellectual property is one of the keys to the success of the new electronic superhighway system. The primary purpose of copyright legislation is to foster the creation and dissemination of intellectual works for the public welfare; the second purpose is to give creators the reward due them for their contribution to society. The copyright law tries to strike a fair balance between the rights of the creators to control the dissemination of their works and the public interest in their widest dissemination.

Finally, the Library of Congress hopes to contribute to the electronic future by being an exemplary catalyst for the library community. Vice President Gore has said that libraries "are the keys to American success in fully exploiting the information superhighways of the future."

As we see it, the Library of Congress' collections are part of the nation's "strategic information reserve" that will provide the intellectual cargo on the information superhighway. We hope the Library's National Digital Library venture will also serve as an inspiration, perhaps a *de facto* standards-making model, for the many libraries in America that will begin making their unique collections electronically available. The practical experience of the National Digital Library may help those who are only now beginning the task of electronic conversion.

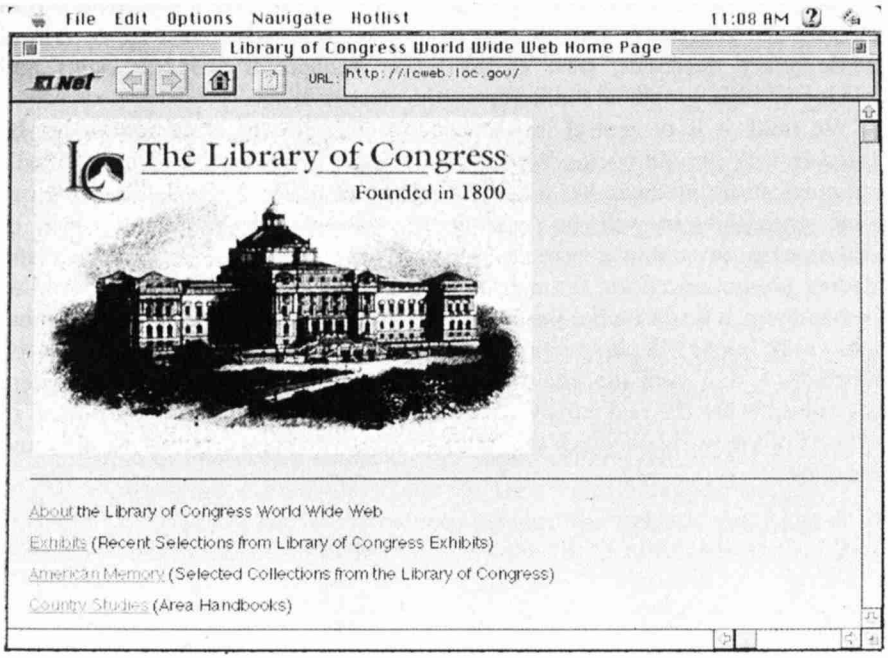
Libraries in America - and elsewhere in the world - will be more important than ever. They will provide easy, inexpensive access to a vast variety of information services for the public; and librarians will increasingly develop new techniques and new skills in guiding users to the information they are seeking. As the electronic information networks become truly worldwide, the librarians

everywhere will become sophisticated "knowledge navigators.' " Without the libraries and librarians, the gap between information "haves" and "have-nots" cannot be overcome.

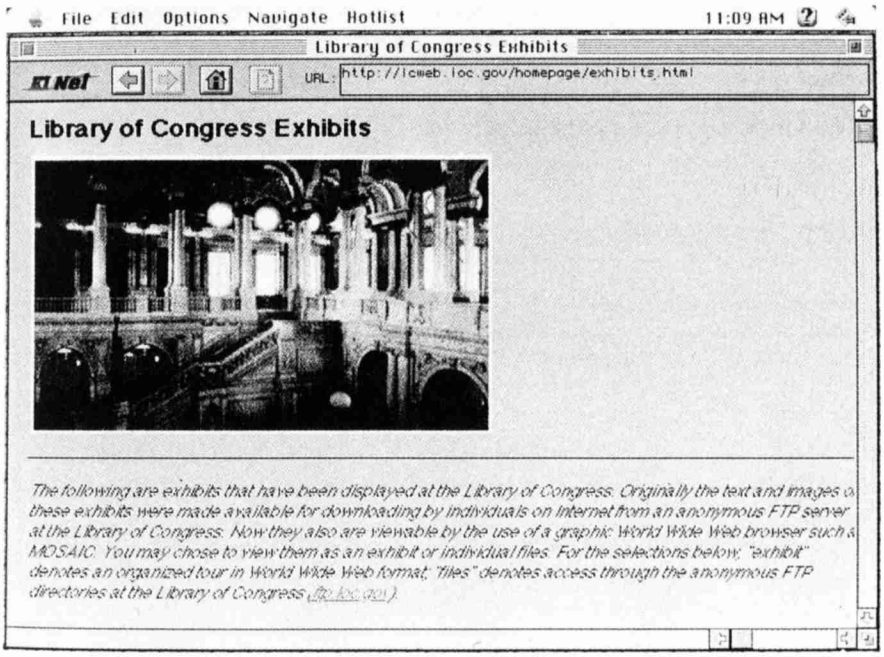
The critical role of libraries has been recognized in the Clinton Administration's "NII: Agenda for Action," which calls for linking all schools and libraries to the National Information Infrastructure by the year 2000. The Library of Congress will work with other government agencies to insure that the needs of libraries are addressed, and the Library of Congress will contribute to critical public policy questions, such as protecting intellectual property rights and developing bibliographical standards for the electronic age.

We think it is of central importance that the new digitized knowledge be mixed in with the old books. We believe that the book, that most user-friendly communications medium, has a long life ahead, of it. We do not believe that our great grandchildren will be reading *Huckleberry Finn* and the plays of Shakespeare on computer screens. We will keep supporting local literacy and reading promotion efforts through our own lively Center for the Book. And as long as there is a substantial portion of the human record residing in traditional books only, books will play a vital role in human culture. For, beyond all the data, information, and even the knowledge that we can accumulate and disseminate electronically lies the real pay-off: those true peaks of human accomplishment in all parts of the world on which the future of our civilization depends: wisdom and creativity.

ill. 1


File Edit Options Navigate Hotlist
11:08 AM
Library of Congress World Wide Web Home Page
URL: http://lcweb.loc.gov/
The Library of Congress
Founded in 1800
About the Library of Congress World Wide Web
Exhibits (Recent Selections from Library of Congress Exhibits)
American Memory (Selected Collections from the Library of Congress)
Country Studies (Area Handbooks)

ill. 2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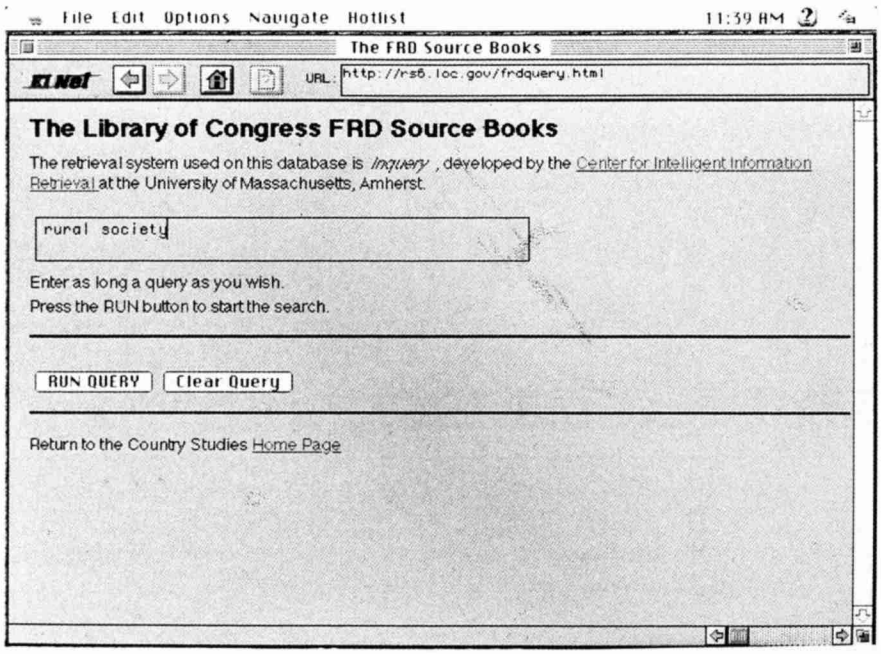
11:09 AM
Library of Congress Exhibits
URL: http://lcweb.loc.gov/homepage/exhibits.html
Library of Congress Exhibits
The following are exhibits that have been displayed at the Library of Congress. Originally the text and images o
these exhibits were made available for downloading by individuals on Internet from an anonymous FTP server
at the Library of Congress. Now they also are viewable by the use of a graphic World Wide Web browser such a
MOSAIC. You may chose to view them as an exhibit or individual files. For the selections below, "exhibit"
denotes an organized tour in World Wide Web format; "files" denotes access through the anonymous FTP
directories at the Library of Congress (FTP Access).

ill. 3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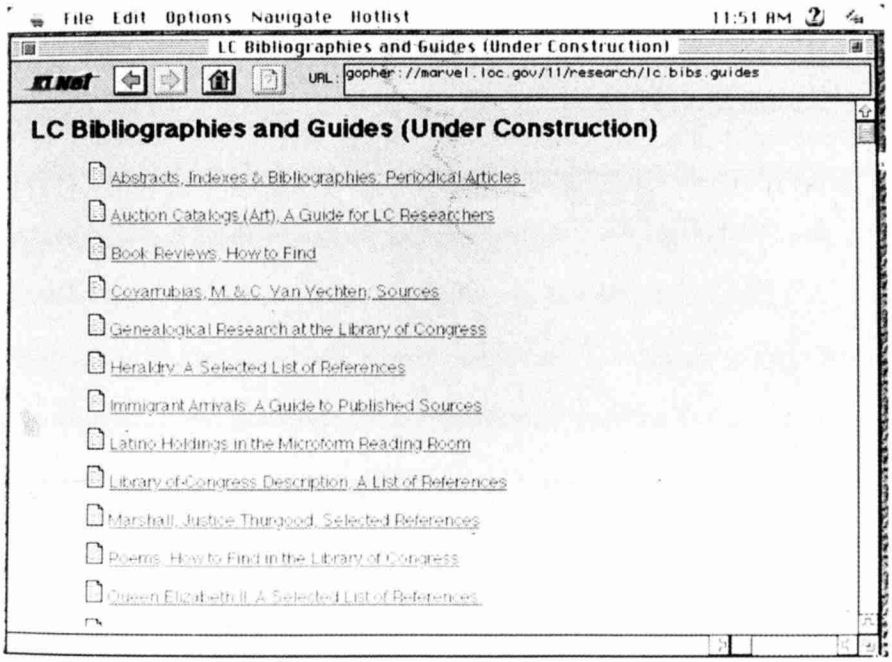
11:39 AM
The FRD Source Books
URL: http://rs6.loc.gov/frdquery.html
The Library of Congress FRD Source Books
The retrieval system used on this database is Inquery , developed by the Center for Intelligent Information Retrieval at the University of Massachusetts, Amherst.
rural society
Enter as long a query as you wish.
Press the RUN button to start the search.
RUN QUERY
Clear Query
Return to the Country Studies Home Page

ill. 4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LC Bibliographies and Guides (Under Construction)
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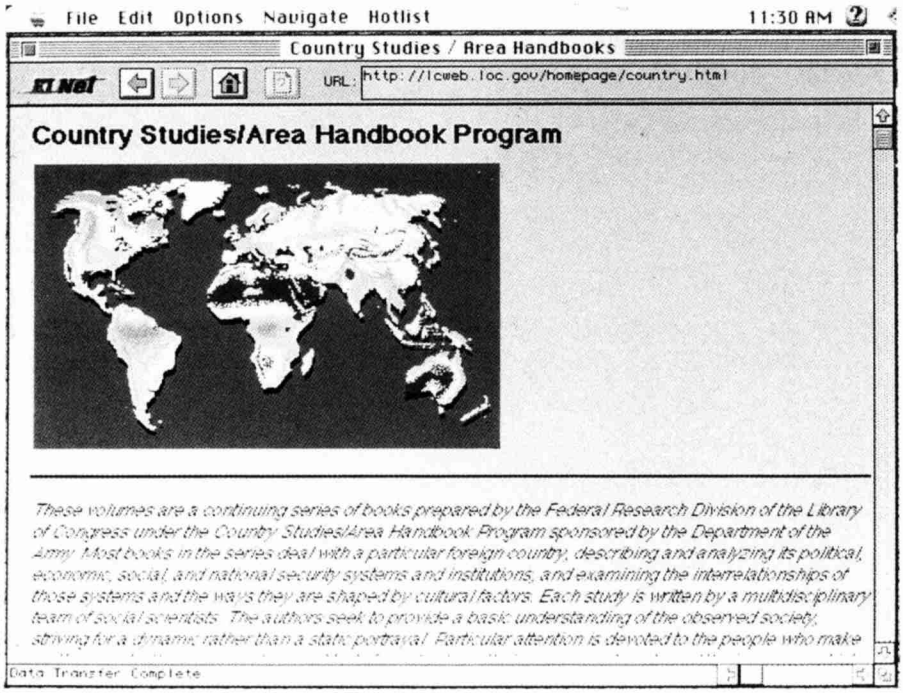
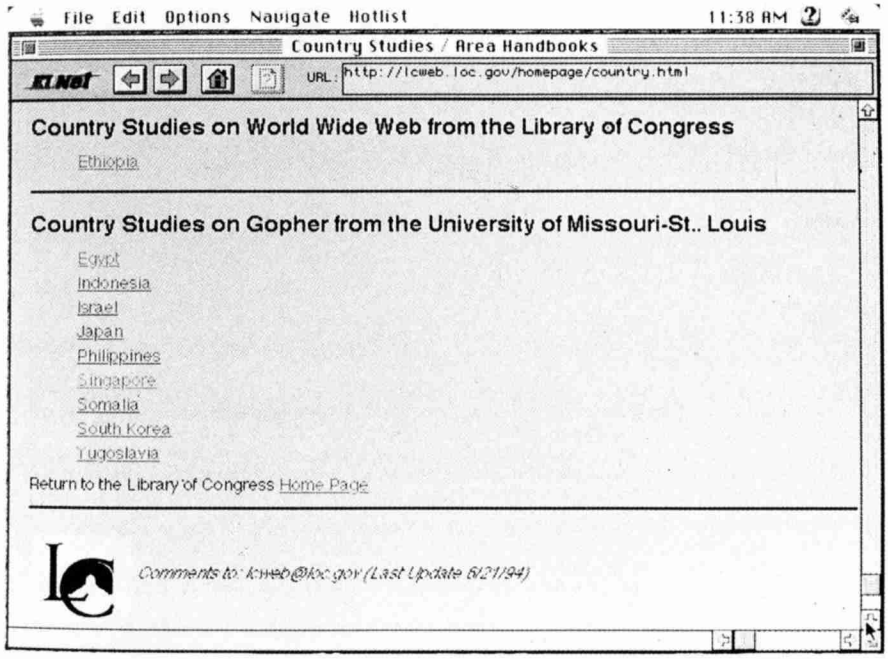
LC Bibliographies and Guides (Under Construction)
Abstracts, Indexes & Bibliographies: Periodical Articles
Auction Catalogs (Art), A Guide for LC Researchers
Book Reviews, How to Find
Covarrubias, M. & C. Van Vechten: Sources
Genealogical Research at the Library of Congress
Heraldry: A Selected List of References
Immigrant Arrivals: A Guide to Published Sources
Latino Holdings in the Microform Reading Room
Library of Congress Description, A List of References
Marshall, Justice Thurgood, Selected References
Poems, How to Find in the Library of Congress
Queen Elizabeth II, A Selected List of References

ill. 5


File Edit Options Navigate Hotlist
11:30 AM
Country Studies / Area Handbooks
URL: http://lcweb.loc.gov/homepage/country.html
Country Studies/Area Handbook Program
These volumes are a continuing series of books prepared by the Federal Research Division of the Library of Congress under the Country Studies/Area Handbook Program sponsored by the Department of the Army. Most books in the series deal with a particular foreign country, describing and analyzing its political, economic, social, and national security systems and institutions, and examining the interrelationships of those systems and the ways they are shaped by cultural factors. Each study is written by a multidisciplinary team of social scientists. The authors seek to provide a basic understanding of the observed society, striving for a dynamic, rather than a static portrayal. Particular attention is devoted to the people who make
Data Transfer Complete

ill. 6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Country Studies / Area Handbooks
URL: http://lcweb.loc.gov/homepage/country.html
Country Studies on World Wide Web from the Library of Congress
Ethiopia
Country Studies on Gopher from the University of Missouri-St.. Louis
Egypt
Indonesia
Israel
Japan
Philippines
Singapore
Somalia
South Korea
Yugoslavia
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Comments to: lcweb@loc.gov (Last Update 6/21/94)

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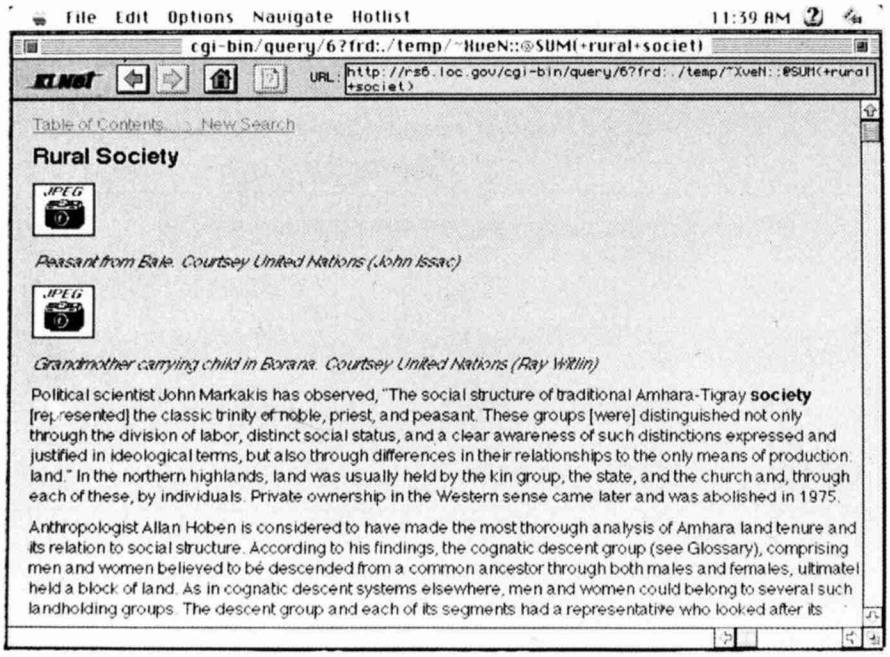
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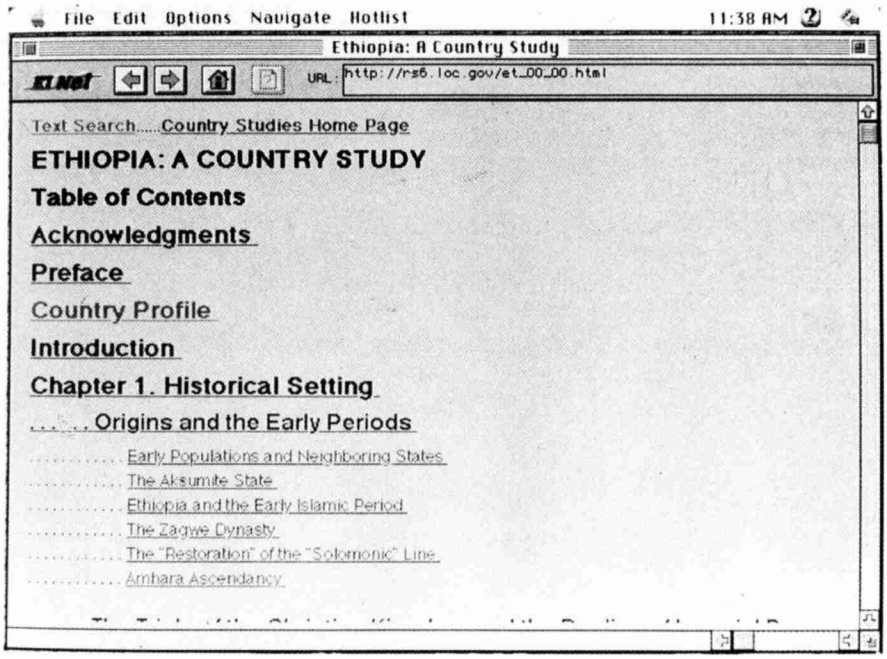
URL: http://rs6.loc.gov/cgi-bin/query/6?frd:../temp/~XveN::@SUM(+rural+societ)
Table of Contents New Search
Rural Society
JPEG
Peasant from Bale. Courtsey United Nations (John Issac)
JPEG
Grandmother carrying child in Borana. Courtsey United Nations (Ray Witlin)
Political scientist John Markakis has observed, "The social structure of traditional Amhara-Tigray society [represented] the classic trinity of noble, priest, and peasant. These groups [were] distinguished not only through the division of labor, distinct social status, and a clear awareness of such distinctions expressed and justified in ideological terms, but also through differences in their relationships to the only means of production: land." In the northern highlands, land was usually held by the kin group, the state, and the church and, through each of these, by individuals. Private ownership in the Western sense came later and was abolished in 1975.
Anthropologist Allan Hoben is considered to have made the most thorough analysis of Amhara land tenure and its relation to social structure. According to his findings, the cognatic descent group (see Glossary), comprising men and women believed to be descended from a common ancestor through both males and females, ultimatel held a block of land. As in cognatic descent systems elsewhere, men and women could belong to several such landholding groups. The descent group and each of its segments had a representative who looked after its

ill. 8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Ethiopia: A Country Study
URL: http://rs6.loc.gov/et_00_00.html
Text Search.....Country Studies Home Page
ETHIOPIA: A COUNTRY STUDY
Table of Contents
Acknowledgments
Preface
Country Profile
Introduction
Chapter 1. Historical Setting
Origins and the Early Periods
Early Populations and Neighboring States
The Aksumite State
Ethiopia and the Early Islamic Period
The Zagwe Dynasty
The "Restoration" of the "Solomonic" Line
Amhara Ascendancy

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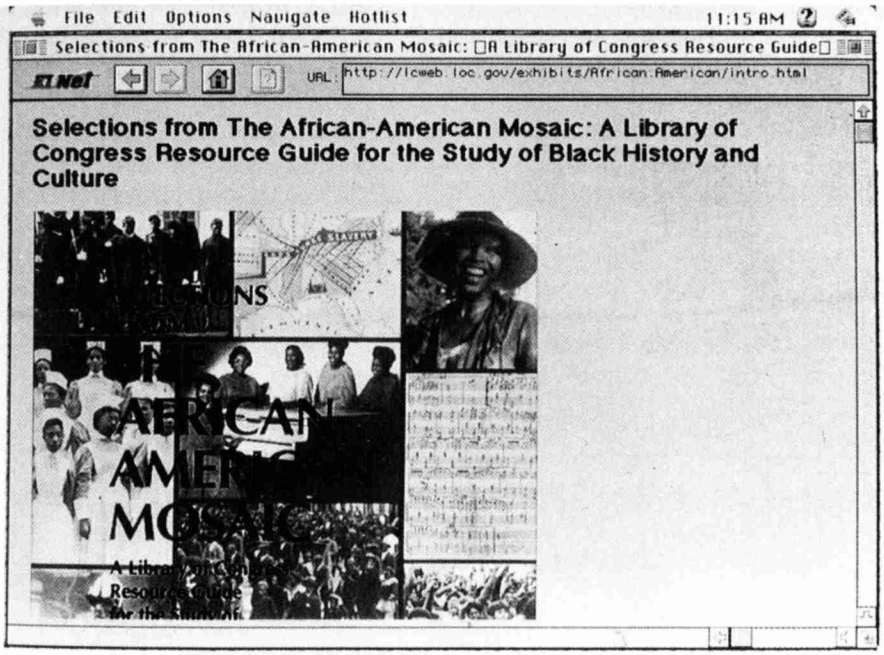
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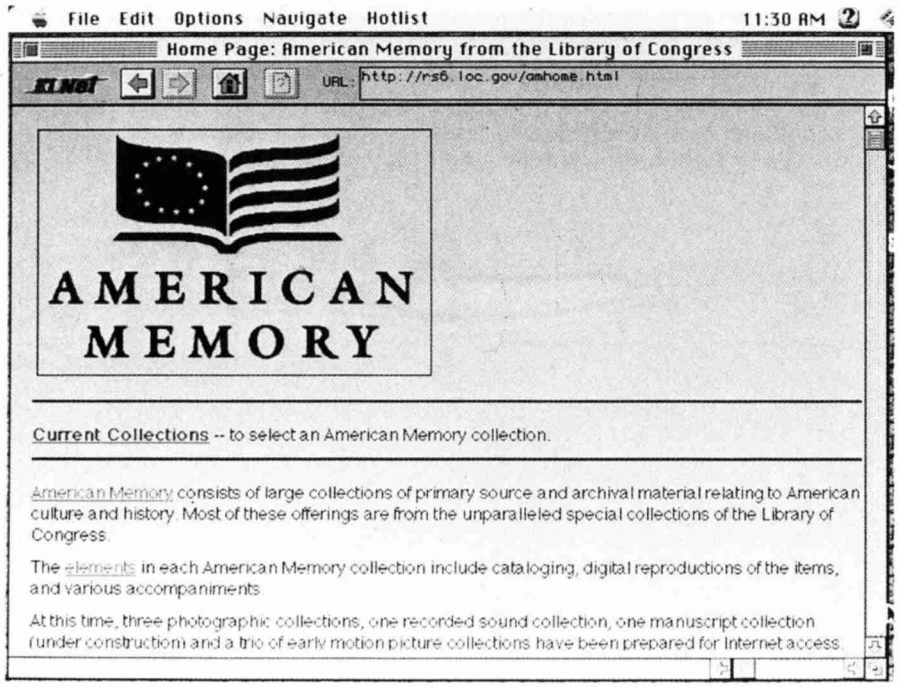
URL: http://lcweb.loc.gov/exhibits/African.American/intro.html
Selections from The African-American Mosaic: A Library of Congress Resource Guide for the Study of Black History and Culture

ill. 11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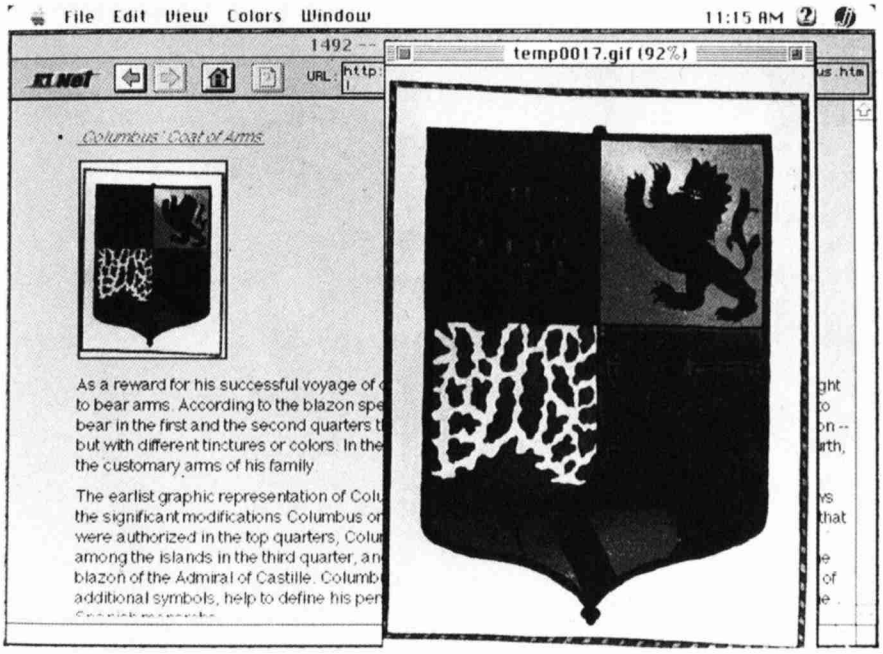
Home Page: American Memory from the Library of Congress
URL: http://rs6.loc.gov/amhome.html
AMERICAN MEMORY
Current Collections -- to select an American Memory collection.
American Memory consists of large collections of primary source and archival material relating to American culture and history. Most of these offerings are from the unparalleled special collections of the Library of Congress.
The elements in each American Memory collection include cataloging, digital reproductions of the items, and various accompaniments.
At this time, three photographic collections, one recorded sound collection, one manuscript collection (under construction) and a trio of early motion picture collections have been prepared for Internet access.

ill. 12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temp0017.gif (92%)
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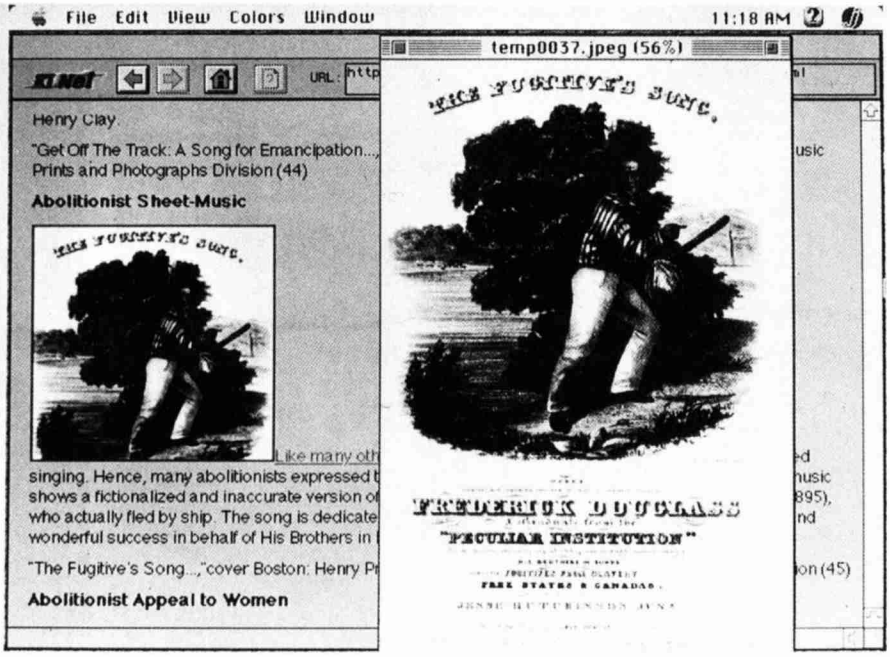
Columbus' Coat of Arms
As a reward for his successful voyage of
to bear arms. According to the blazon spe
bear in the first and the second quarters t
but with different tinctures or colors. In the
the customary arms of his family
The earlist graphic representation of Colu
the significant modifications Columbus or
were authorized in the top quarters, Colu
among the islands in the third quarter, an
blazon of the Admiral of Castille. Columb
additional symbols, help to define his per

ill. 13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Henry Clay.
"Get Off The Track: A Song for Emancipation...,
Prints and Photographs Division (44)
Abolitionist Sheet-Music
singing. Hence, many abolitionists expressed
shows a fictionalized and inaccurate version o
who actually fled by ship. The song is dedicate
wonderful success in behalf of His Brothers in
"The Fugitive's Song...," cover Boston: Henry P
Abolitionist Appeal to Women
FREDERICK DOUGLASS
"PECULIAR INSTITUTION"

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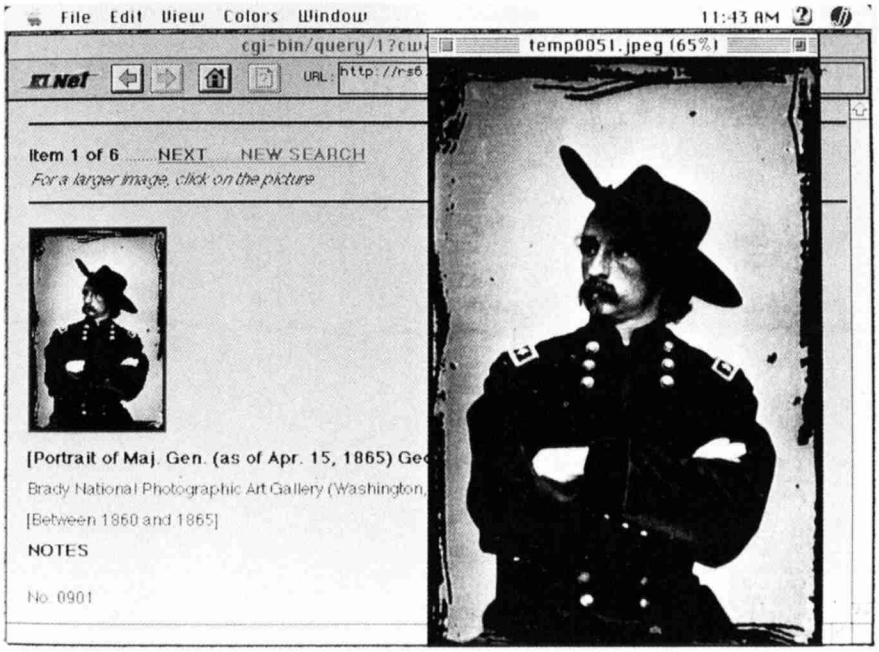
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Item 1 of 6 ..... NEXT NEW SEARCH
For a larger image, click on the picture
[Portrait of Maj. Gen. (as of Apr. 15, 1865) Ge
Brady National Photographic Art Gallery (Washington,
[Between 1860 and 1865]
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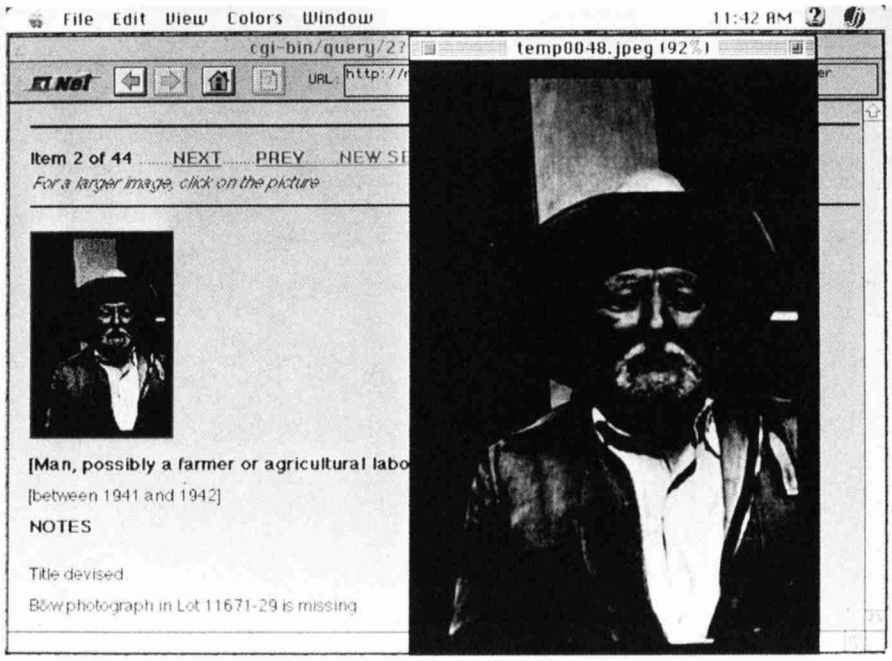
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[between 1941 and 1942]
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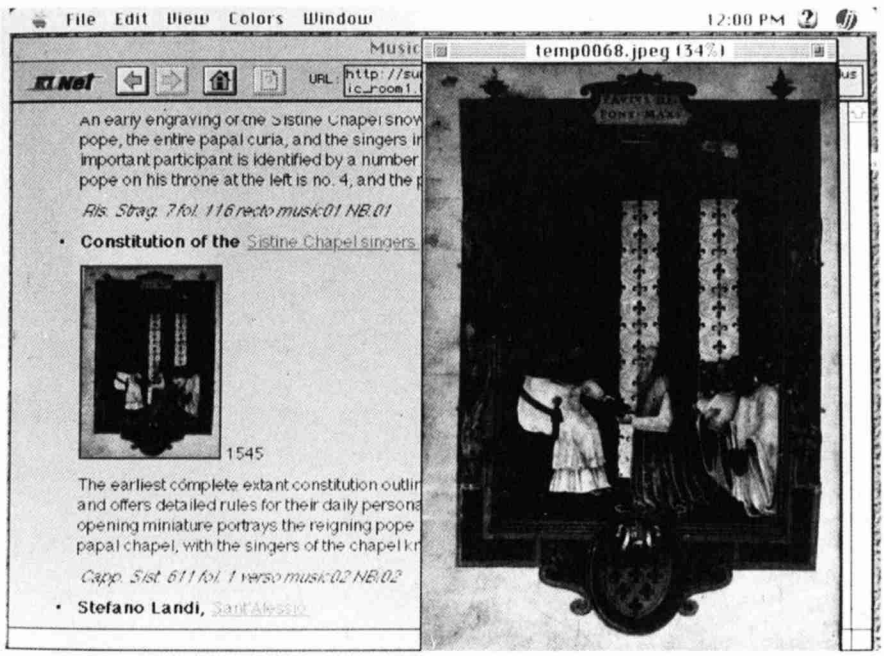
ill. 16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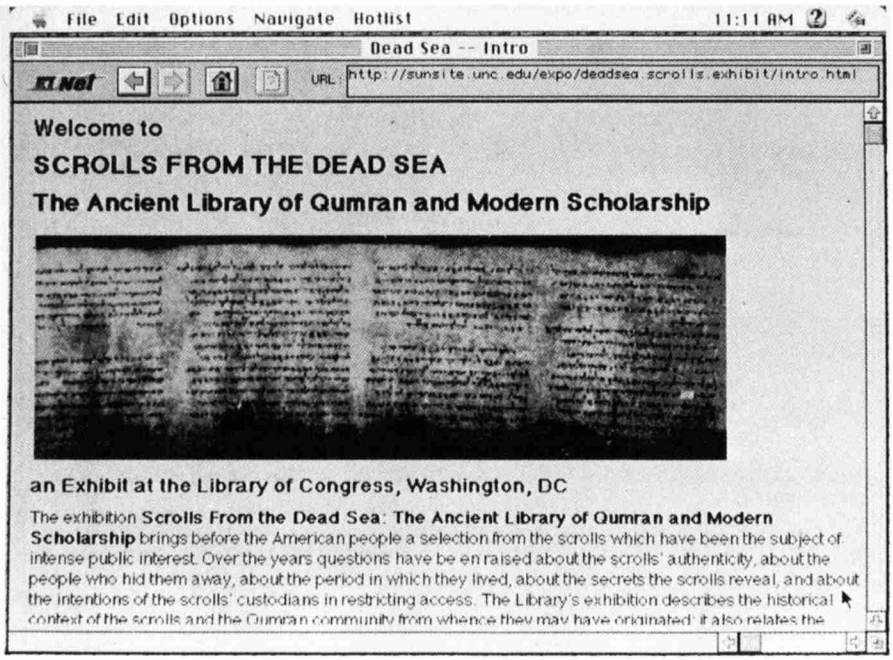
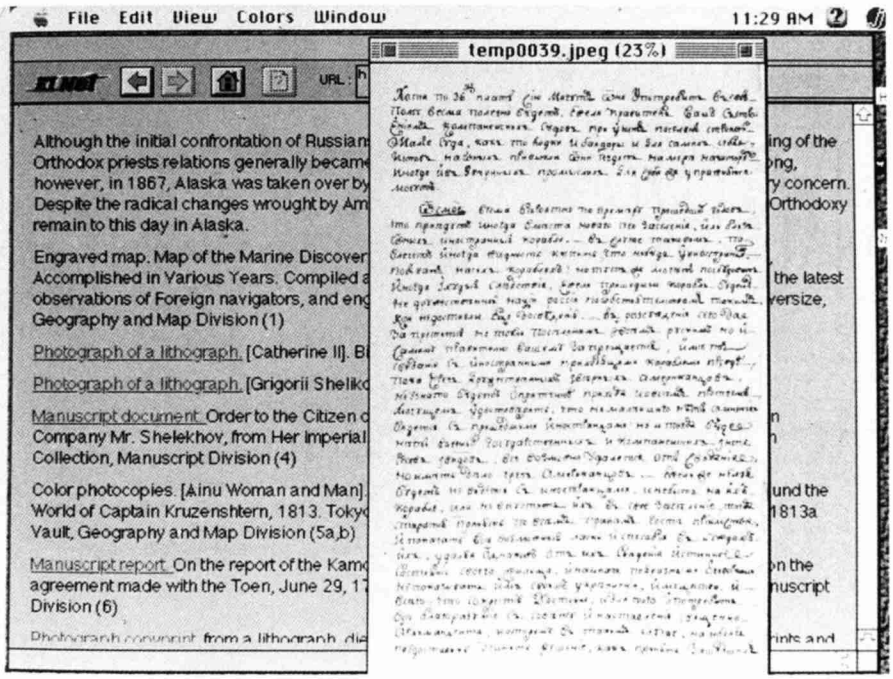
12:00 PM
Music
temp0068.jpeg (34%)
URL:
An early engraving of the Sistine Chapel show
pope, the entire papal curia, and the singers in
important participant is identified by a number
pope on his throne at the left is no. 4, and the p
Ms. Strag. 7 fol. 116 recto musik:01 NB:01
Constitution of the Sistine Chapel singers
1545
The earliest complete extant constitution outlin
and offers detailed rules for their daily persona
opening miniature portrays the reigning pope
papal chapel, with the singers of the chapel k
Capp. Sist. 611 fol. 1 verso musik:02 NB:02
Stefano Landi, Sant'Alessio

ill. 17


File Edit Options Navigate Hotlist
11:11 AM
Dead Sea -- Intro
URL: http://sunsite.unc.edu/expo/deadsea.scrolls.exhibit/intro.html
Welcome to
SCROLLS FROM THE DEAD SEA
The Ancient Library of Qumran and Modern Scholarship
an Exhibit at the Library of Congress, Washington, DC
The exhibition Scrolls From the Dead Sea: The Ancient Library of Qumran and Modern Scholarship brings before the American people a selection from the scrolls which have been the subject of intense public interest. Over the years questions have be en raised about the scrolls' authenticity, about the people who hid them away, about the period in which they lived, about the secrets the scrolls reveal, and about the intentions of the scrolls' custodians in restricting access. The Library's exhibition describes the historical context of the scrolls and the Qumran community from whence they may have originated; it also relates the

ill. 18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Although the initial confrontation of Russian
Orthodox priests relations generally became
however, in 1867, Alaska was taken over by
Despite the radical changes wrought by Am
remain to this day in Alaska.
Engraved map. Map of the Marine Discover
Accomplished in Various Years. Compiled a
observations of Foreign navigators, and eng
Geography and Map Division (1)
Photograph of a lithograph. [Catherine II]. B
Photograph of a lithograph. [Grigorii Shelik
Manuscript document. Order to the Citizen c
Company Mr. Shelekhov, from Her Imperial
Collection, Manuscript Division (4)
Color photocopies. [Ainu Woman and Man].
World of Captain Kruzenshtern, 1813. Tokyo
Vault, Geography and Map Division (5a,b)
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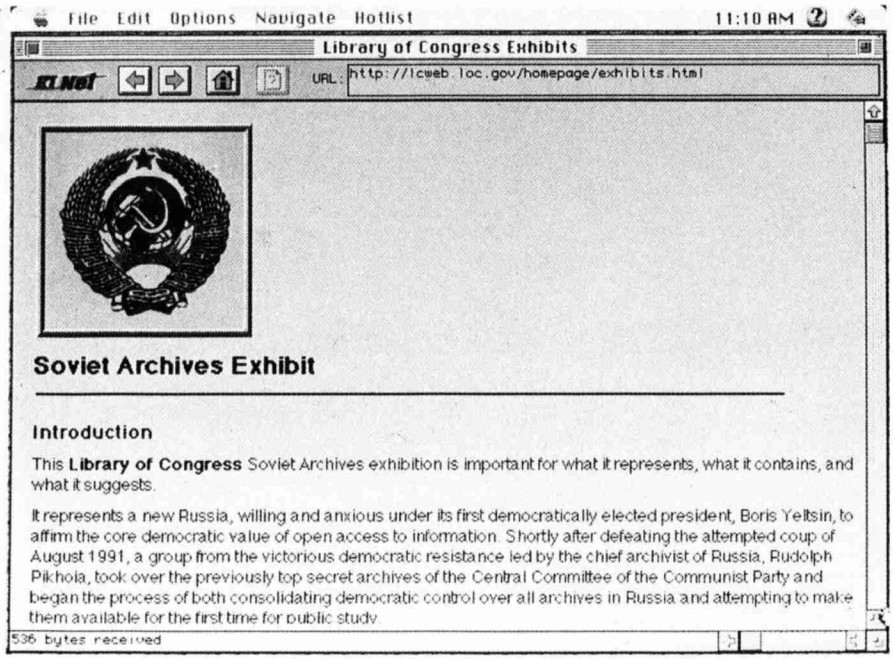
File Edit Options Navigate Hotlist
11:10 AM
Library of Congress Exhibits
URL: http://lcweb.loc.gov/homepage/exhibits.html
Soviet Archives Exhibit
Introduction
This Library of Congress Soviet Archives exhibition is important for what it represents, what it contains, and what it suggests.
It represents a new Russia, willing and anxious under its first democratically elected president, Boris Yeltsin, to affirm the core democratic value of open access to information. Shortly after defeating the attempted coup of August 1991, a group from the victorious democratic resistance led by the chief archivist of Russia, Rudolph Pikhoia, took over the previously top secret archives of the Central Committee of the Communist Party and began the process of both consolidating democratic control over all archives in Russia and attempting to make them available for the first time for public study.
536 bytes received

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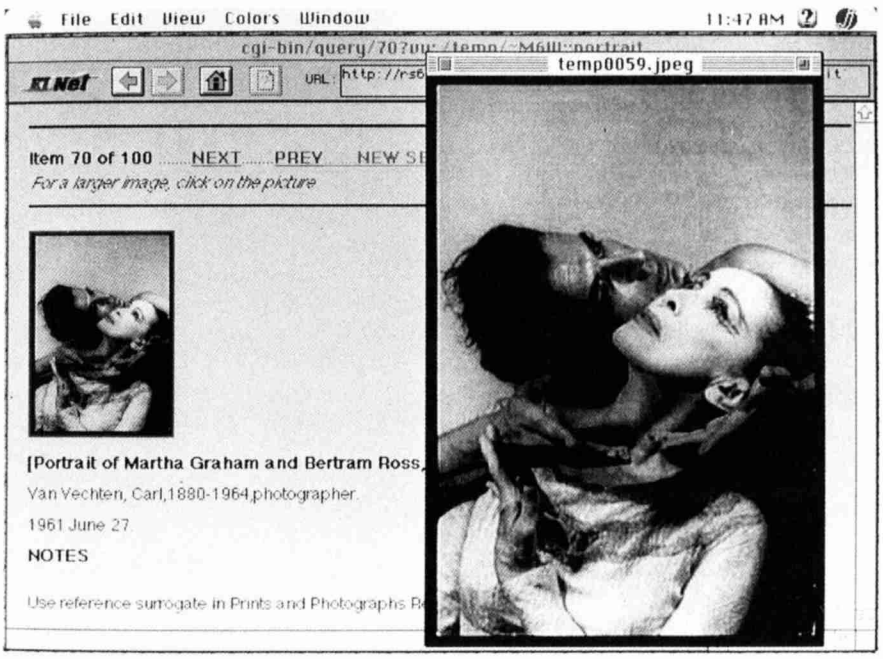
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URL:
Item 70 of 100 NEXT PREV
For a larger image, click on the picture
[Portrait of Martha Graham and Bertram Ross,
Van Vechten, Carl,1880-1964,photographer.
1961 June 27.
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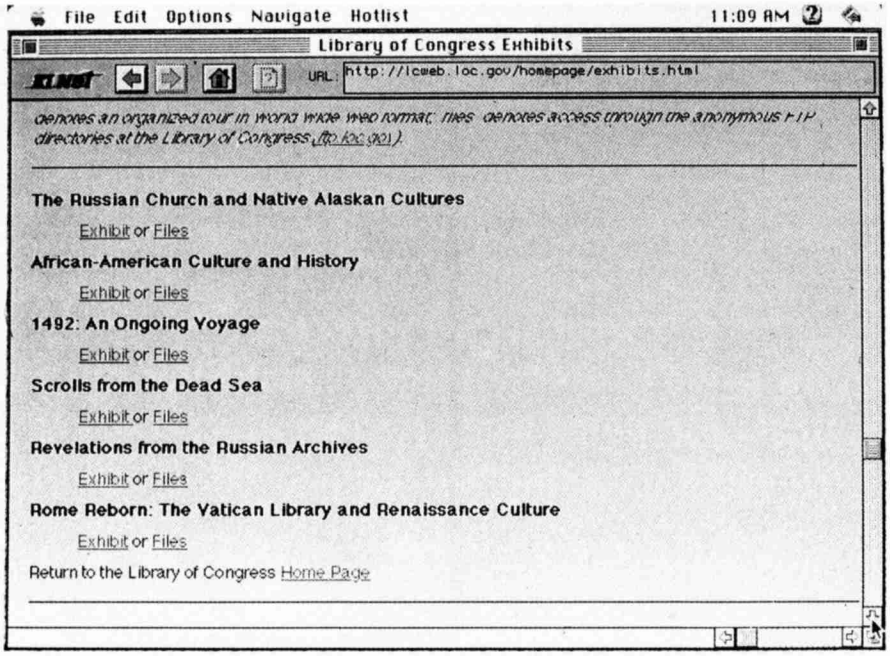
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11:09 AM
Library of Congress Exhibits
URL: http://lcweb.loc.gov/homepage/exhibits.html
denotes an organized tour in World Wide Web format. files denotes access through the anonymous FTP directories at the Library of Congress (ftp.loc.gov).
The Russian Church and Native Alaskan Cultures
Exhibit or Files
African-American Culture and History
Exhibit or Files
1492: An Ongoing Voyage
Exhibit or Files
Scrolls from the Dead Sea
Exhibit or Files
Revelations from the Russian Archives
Exhibit or Files
Rome Reborn: The Vatican Library and Renaissance Culture
Exhibit or Files
Return to the Library of Congress Home Page

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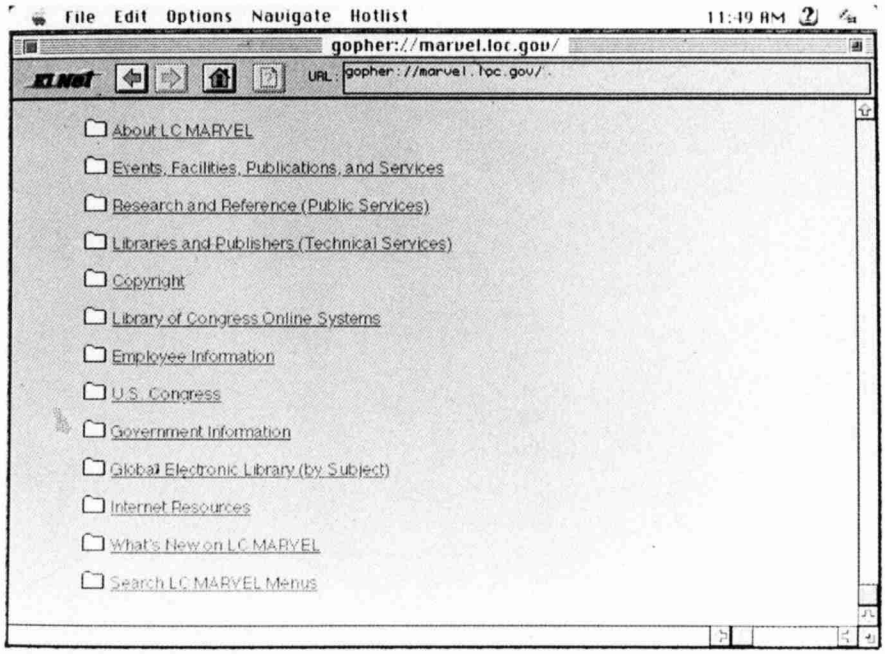
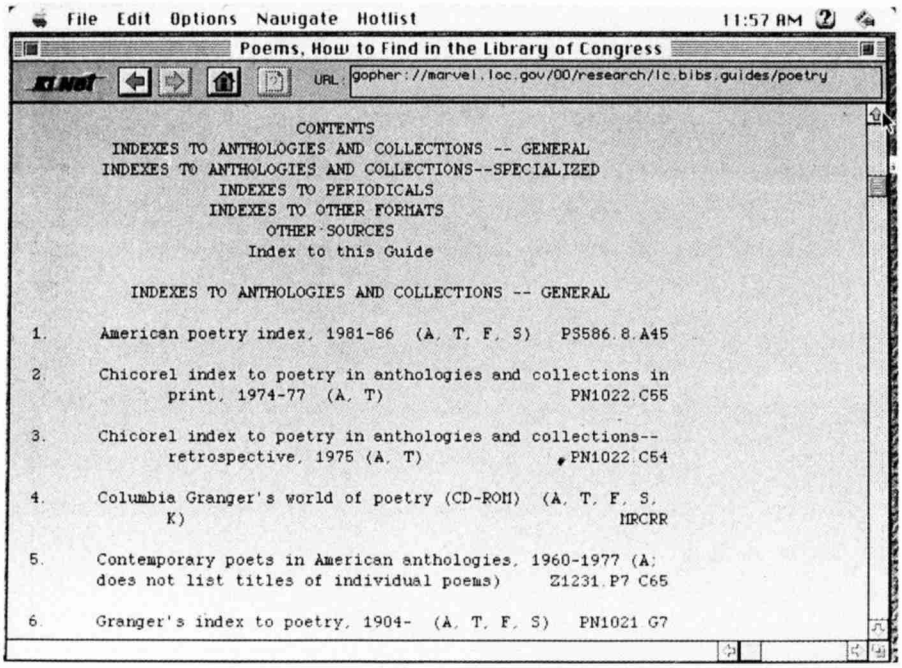

File Edit Options Navigate Hotlist
11:49 AM
gopher://marvel.loc.gov/
XLNet
URL: gopher://marvel.loc.gov/
About LC MARVEL
Events, Facilities, Publications, and Services
Research and Reference (Public Services)
Libraries and Publishers (Technical Services)
Copyright
Library of Congress Online Systems
Employee Information
U.S. Congress
Government Information
Global Electronic Library (by Subject)
Internet Resources
What's New on LC MARVEL
Search LC MARVEL Menus


File Edit Options Navigate Hotlist
11:57 AM
Poems, How to Find in the Library of Congress
URL: gopher://marvel.loc.gov/00/research/lc.bibs.guides/poetry
CONTENTS
INDEXES TO ANTHOLOGIES AND COLLECTIONS -- GENERAL
INDEXES TO ANTHOLOGIES AND COLLECTIONS--SPECIALIZED
INDEXES TO PERIODICALS
INDEXES TO OTHER FORMATS
OTHER SOURCES
Index to this Guide
INDEXES TO ANTHOLOGIES AND COLLECTIONS -- GENERAL
1. American poetry index, 1981-86 (A, T, F, S) PS586.8.A45
2. Chicorel index to poetry in anthologies and collections in print, 1974-77 (A, T) PN1022.C55
3. Chicorel index to poetry in anthologies and collections--retrospective, 1975 (A, T) PN1022.C54
4. Columbia Granger's world of poetry (CD-ROM) (A, T, F, S, K) MRCRR
5. Contemporary poets in American anthologies, 1960-1977 (A; does not list titles of individual poems) Z1231.P7 C65
6. Granger's index to poetry, 1904- (A, T, F, S) PN1021 G7

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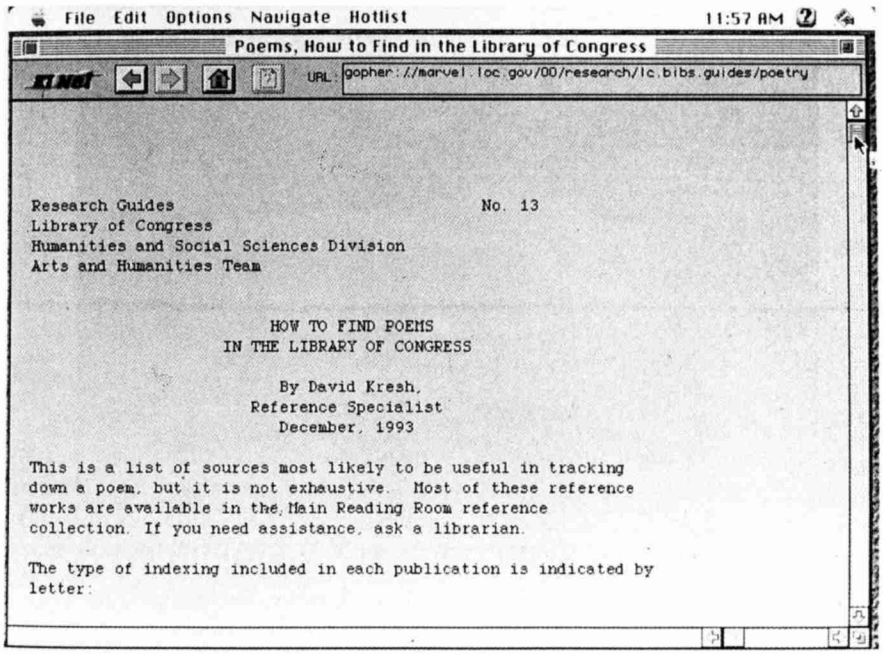
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11:57 AM
Poems, How to Find in the Library of Congress
URL: gopher://marvel.loc.gov/00/research/lc.bibs.guides/poetry
Research Guides
Library of Congress
Humanities and Social Sciences Division
Arts and Humanities Team
No. 13
HOW TO FIND POEMS
IN THE LIBRARY OF CONGRESS
By David Kresh,
Reference Specialist
December, 1993
This is a list of sources most likely to be useful in tracking down a poem, but it is not exhaustive. Most of these reference works are available in the Main Reading Room reference collection. If you need assistance, ask a librarian.
The type of indexing included in each publication is indicated by letter:

European Research Libraries Cooperation:
The LIBER Quarterly, 5 (1995), 183-191.

Providing Collaborative Access to German Political Science and Historical Resources: a Pilot Project of the Association of Research Libraries

WINSTON TABB
Associate Librarian for Collection Services, The Library of Congress, Washington

I. Project Overview

The Association of Research Libraries (ARL) requests $ 100,000 for a pilot project to develop a distributed, network-based system of acquisitions, access indices, and document delivery in support of German political science and historical research. This grant is contingent on an additional multi-institutional commitment of at least $ 60,000 from ARL libraries with strong German collections and commitment to research in German political science and history. This project will create a prototype for comprehensive and fully interconnected collections for German studies in political science research, as well as a model for other scholarly fields. The project will focus on three specific activities:

1. We will establish distributed collecting responsibilities for a cross-section of monographs published in Germany, and we will develop complementary systems for cataloging and document delivery.
2. We will identify serials published in Germany that are critical for furthering scholarship, but are not widely held in North America, and devise a strategy to ensure that at least one U.S. or Canadian library commits to acquiring, serving, and preserving each title.
3. We will verify that a network of ARL libraries provides coordinated access to German federal documents, including general government publications, parliamentary documents, and statistical publications. The German Demonstration Project will seek the cooperation of German research libraries and German government agencies in

locating or encouraging development of digital versions of these documents.

These three project components will enable us to develop the techniques and procedures essential for German political scientists, and ultimately scholars in other fields, to take full advantage of the economies and efficiencies promised by the combination cooperative acquisitions and electronic delivery mechanisms. We will thus address issues such as the local implications of decisions to rely on remote collections, the legalities and logistics of copyright clearance for foreign publications, implementation and enforcement of cooperative commitments, cataloging and indexing requirements, and cost analyses and sustainable fee structures for effective cooperative programs.

To succeed, this pilot initiative will require funding for a Project Coordinator who will carry out major project tasks, provide logistical support, and maintain high levels of project energy and participation. Additional funds will support leadership meeting of directors and specialist librarians from participating institutions. About forty percent of the project's $ 160,000 budget will be raised from ARL libraries with strong German collections and commitment to research in German political science and history. These libraries will also contribute funds for materials and staff time. The ARL membership has unanimously endorsed the concepts of distributed collection development and effective resource sharing.

This proposal will first describe the project's institutional background. It will follow with more detailed descriptions of what we seek to accomplish and how we will proceed, and end with our project budget.

II. The Institutional Background

North American research libraries have a strong tradition in the collection of literature published in Germany. Richard Dorn, in an article in the Harvard Library Bulletin published in 1973, chronicled the first hundred years of the Otto Harrassowitz firm and its role in the building of substantial collections of German literature in American libraries through the provision of millions of volumes of publications over the course of a century.[1] Annual production of documents in Germany continues to be quite high, and the importance of the materials is such that its availability and easy access is essential for historical scholarship and political decision-making in North America. As an outgrowth of a study on acquisitions of Western European materials completes in March 1992 by a subcommittee of the Western European Specialists section of the

1 Dorn, Richard W.: Otto Harrassowitz, Buchhandlung-Verlag-Antiquariat: the First Century. In: Harvard Library Bulletin. Vol. XXI, No. 4 (October 1973), p. 365-371.

Association of College and Research Libraries, James Spohrer and Michael Olson developed a project to assess the holdings of U.S. libraries in German political science materials. Spohrer and Olson concluded that "U.S. research library collecting for German political science for the period under consideration [1985-1992] falls short of adequacy in every significant category [important works for any U.S. research library with an interest in German politics; important works which should be held in at least one U.S. research library; relevant English-language titles; and relevant titles in languages other than German or English]..."[2] This study highlighted the need for a more comprehensive collection policy in the area of German political science. One way to close the gaps is to achieve increased cooperation among North American research libraries. By improving the efficiency of collecting and providing access to an important segment of German political science documents, the libraries will be able to conserve resources which they can direct to the collection of important, unique German political science and historical publications. Since demand for timely access to German publications continues unabated, libraries, finding their resources inelastic, are seeking new and cost-effective ways to provide access to materials. Cooperative collection development, based on agreements to share publications acquired on the basis of a systematic plan to divide up responsibility for acquiring, cataloging, serving, and preserving materials in a particular topical or geographic area, has enabled libraries to expand their coverage. Arrangements to share materials have frequently been imperiled, however, by local perceptions and experience that an item must actually be held on site to be truly accessible. Yet, with the proliferation of publications, and the increasingly higher costs of acquiring materials, libraries must either reduce the number of items they collect or develop a new model for access to information. Through a digital, networked environment, libraries now have means to transcend the impediments to cooperation engendered by the need to maintain a permanent physical object in a given location.

The Association of American Universities (AAU), in collaboration with the Association of Research Libraries, in 1993 established the "Research Libraries Project" to address the prospects for research libraries at this time of both heavy pressure and unprecedented opportunity. The AAU Task Force on Acquisition and Distribution of Foreign Language and Area Studies Materials, charged with finding ways to improve access to foreign language resources, was one component. The Task Force in turn created an action plan calling for research libraries to share responsibility for collecting foreign imprints and to ensure shared access within a "distributed North American collection of foreign materials." This goal would be met through three demonstration projects, one

2 Spohrer, James H.: ARL German Political Science Project. In: Western European Specialists Section Newsletter. Vol. 17, no. 1, (Fall 1993), p. 3-4.

focused on social science documents published in Germany. (The others are Latin American studies and Japanese science and technical information).

III. Project Goals

The German publication output is abundant, and the literature of political science and history is important for supporting and enhancing the North American understanding of Europe. Yet, at a time when the significance of global politics and interaction is increasing, U.S. and Canadian libraries are recognizing that it is becoming more and more difficult for them to sustain comprehensive foreign language collections. Not only does the acquisition of a growing number of titles evade them, but even acquiring a selected number of titles strains their budgets when they take into account the processing, servicing, and preservation needs of library materials. The ARL German demonstration project in German political science literature seeks to improve North American coverage or access to important monographs in political science published in Germany in the German language; to guarantee, through coordinated, cooperative commitments, ready access to key serial titles not currently held in Canadian and U.S. research libraries; and to determine the level of holdings and access to German federal documents, including parliamentary proceedings and statistical data as well as national agency publications.

The project will devise a mechanism for identifying monographic titles of value that are not currently collected by any major U.S. or Canadian library, and a group of experts in West European studies will analyze the reasons for the failure of libraries to acquire these titles. The group will make recommendations for expanded approval plan policies, improved collection strategies, and remedies for closing the gap so that coverage of important monographs in German political science and history is comprehensive, albeit in a networked fashion.

For serial literature, the project will compare titles published in Germany in the area of political science and history with titles held by North American research libraries. The project will propose ways to expand coverage of titles held in North American through cooperative agreements to collect and provide access to particular titles. The project will also investigate the availability of titles in machine-readable form, and partners will seek opportunities to test the feasibility of access to digital archives substituting for the collection of documents in paper form in some cases. This aspect will probe issues such as licensing of digital access, copyright considerations, and technical requirements for efficient and reliable access.

The third component in the project, access to German federal documents, presents an opportunity to collaborate with colleagues in German research libraries. Although the traditional model has been for many institutions to acquire substantial holdings, the German demonstration project will pursue the

potential of access to digital materials as a supplement or replacement for collecting the hard-copy originals. To achieve success in this area of the project, the partners will take stock of current holdings and access to these materials, and will develop a list of electronic equivalents and their sources. Working with their German counterparts, the ARL libraries represented in the project will seek to promote alternative forms of access, such as access to digital documents, that will reduce the cost of acquiring, archiving, and providing document delivery for these materials, and which will, at the same time, increase the reliability and timeliness of access to them.

IV. Work Plan

Two preconditions must be met for this pilot project to succeed. The tasks associated with each project component are substantial and complex: a Project Coordinator must thus be appointed in order to carry out some of the tasks, and to assign others to the project participants. The project also requires tangible commitments from participating members of the Association of Research Libraries to reflect active, top-level support for a practical cooperative initiative. Subsequent sections of this proposal will more throroughly address these preconditions. The following plan assumes that both these requirements are met.

Project activities will center on three distinct endeavors:

1. We will establish distributed collecting responsibilities for representative cross-sections of German political science publications, ensure timely indexing to their contents, and implement expedited (preferably electronic) document delivery mechanisms.

   The Project Coordinator, in conjunction with bibliographers from participating institutions, the Western European Studies Section of the Association of College and Research Libraries, American Library Association, and in consultion with scholars working in the field of German political science and history project, will identify materials in scope.

   The Project Coordinator will work with bibliographers and with administrators for technical processing at each participant institution to ensure that bibliographic records and holdings information are widely available.

   Each institution will develop an estimate of costs of acquiring and maintaining selected monographs, serials, and German government publications; any additional expenses associated with indexing or

document delivery; and data on requests and use. The Project Coordinator will tally all these statistics as a basis for reporting on and evaluating the costs and benefits of the arrangement.

2. We will determine the availability of selected government documents from Germany - digitized form and work will colleagues in Germany on expanding the list of publications available electronically.

   The Working Group will consult with the Project Coordinator and Library of Congress staff concerning catagories of documents for which electronic access will be particularly important. Additional and more specific requests will be invited from both librarians and scholars as the project unfolds.

   The participants will develop a plan for distribution of these materials, or the acquisition of publications relating to political science in electronic form.

3. The Project Coordinator will monitor demand for these documents, and also assess the benefits of electronic access and effective bibliographic control relative to traditional procedures for acquisitions and retrieval.

   The Project Coordinator, in conjunction with participating bibliographers, will develop lists of appropriate publishers and their publications. Dealer lists, topical bibliographies, lists of specialized research institutes, and above all the personal knowledge of librarians and scholars will be essential.

   Participating bibliographers will commit their institutions to comprehensive acquisitions from specific organizations. The Project Coordinator will ensure that all major organizations are covered and will publicize the assignments.

   The Project Coordinator, participating bibliographers, and technical processing administrators at each institution will ensure priority, item-level processing for these materials.

   Each institution will maintain cost statistics for the materials acquired through this project, savings for any materials canceled, any additional expenses associated with cataloguing or document delivery, and data on requests and use. The Project Coordinator will tally all these statistics as a basis for reporting on and evaluating both cost and benefits.

The Project Coordinator, in conjunction with staff at the Association of Research Libraries, will publicize the components of this pilot project within the ARL community and also with the German Studies Association, the Association of College and Research Libraries Western European Specialists Section, the American Historical Association, the American Political Science Association, the research library community as a whole, and through librarian and German electronic discussion lists.

V. Staff and Governance

The Association of Research Libraries will provide the administrative umbrella for project support, for coordination with other demonstration projects, for communication with the research library community as a whole, and for project evaluation.

The ARL Working Group on the German Demonstration Project, consisting of no more than seven librarians and scholars specializing in German political science, will provide general counsel concerning project policy. Winston Tabb, Associate Librarian Collections Services at the Library of Congress and member of the ARL Research Collections Committee will chair the Working Group. Current members of the Working Group have been selected in consultation with ARL library directors. The members of the Working Group are

Roger Chickering	Department of History Georgetown University Washington, D.C. 20057
Martha Brogan	Yale University Libraries New Haven, CT
Konrad Jarausch	Lurcy Professor of European Civilization University of North Carolina Chapel Hill, NC
Michael A. Keller	University Librarian and Director of Academic Information Resources Stanford University Libraries Stanford, CA 94305
James Spohrer	Librarian for Germanic Collections 390 Main Library Annex University of California at Berkeley Berkeley, CA 94720
Winston Tabb, Chair	Associate Librarian for Collections Services Library of Congress - LM 642 Washington, DC 20540

Karin Wittenborg	University Librarian University of Virginia Alderman Library Charlottesville, VA 22903-2498
ARL Staff:	
Jutta Reed-Scott	Senior Program Officer for Preservation and Collections Services Association of Research Libraries
Duane E. Webster	Executive Director Association of Research Libraries
Information Liaison:	
Margaret Hsu	ALA, Western European Specialists Section Subcommittee for the Collaborative Collection Development in German Social Sciences, Cornell University
LC Advisors:	
Margrit Krewson	German and Dutch Area Specialist Library of Congress - LJ 100
Sarah Thomas	Director for Cataloguing Library of Congress - LM 642 Washington, DC 20540

The Working Group Committee will also publicize the pilot project, strengthen the consensus for the associated activities, and encourage participation as needed. The Working Group convened at ARL in December 1994. It will meet again midway through the project's eighteen-month implementation phase, and for a third time as a final evaluation and report are taking shape.

The Project Coordinator will hold a three-quarter time position during the projects's initial year. The Project Coordinator will be a senior librarian who is familiar with the field of German political science and history with the broad concepts and the organizational details of cooperation, and with the constituencies of scholars, administrators, and librarians who will together implement and benefit from networked resources. The Project Coordinator will enjoy institutional grounding at the Association of Reseach Libraries and formal endorsement by such groups as the German Studies Association and the Western European Specialists Section of the Association of College and Research Libraries. The Project Coordinator will coordinate the pilot activities, assist local efforts to develop necessary structures in support of cooperation, and publicize

this venture among all appropriate constituencies. Preliminary discussions have been held to identify potential candidates.

Experiences during this pilot project will indicate whether a durable cooperative program requires a permanent Coordinator. Any such permanent staff would comprise an extra expense associated with interlibrary cooperation and would require longterm funding from those participating in and benefitting from the arrangement. The cost-benefit studies prepared by the Project Coordinator, plus evaluations from participating libraries, librarians, and scholars, will indicate whether a permanent position is necessary.

VI. Project Timetable

The work plan outlines an array of interconnected tasks. The project timetable set targets for accomplishing the project activities.

October 1994	Working Group members named
December 1994	Working Group mets
February 1995	Pilot project initiated
September 1995	Plan for ongoing operation completed
January 1996	Project evaluation
June 1997	Completion of pilot project, papers, presentations

VII. Conclusion

This proposal frames the issues for a project to improve access to German publications in the field of political science and history through a project constituting a strategic and collaborative effort by North American research libraries. It seeks funding to demonstrate the feasibility of cooperative collection development buttressed by access to digital information in a networked environment. Through its implementation, research libraries will surmount the barriers imposed by time and space and offer scholars an unparalleled way to access German publications.

European Research Libraries Cooperation:
The LIBER Quarterly, 5 (1995), 193-198.

Stell' Dir vor, es gibt Informationen in der Bibliothek, und keiner geht hin ...

Ein paar provozierende Gedanken zum Electronic Publishing

HANS-PETER THUN
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Wir verstehen unter elektronischem Publizieren nicht die Tatsache, daß es seit geraumer Zeit möglich ist, Papierdokumente mit Hilfe von Textverarbeitungs-und Textgestaltungsprogrammen (Zauberwort *Desktop-Publishing*) auf Computern herzustellen und so für den Druck vorzubereiten, daß alle vergangenen Künste des Texteschreibens und der Buchdruckkunst quasi auf der Festplatte des Homecomputers zusammengefaßt und damit beinahe zur Lappalie degradiert wurden - jeder Schüler sein eigener Gutenberg. Das Dokument wird per Computerkarte direkt zur Druckerei gesendet und verwandelt sich dort dank moderner elektronischer Segnungen in ein druckfertiges Dokument. Nein, diese Entwicklung elektronischer Techniken diente ja zunächst nur der vereinfachten Herstellung von konventionellen Druckwerken.

Die eigentliche Revolution besteht in der Folge dieser technischen Entwicklung. Plötzlich waren Texte und Abbildungen, ja selbst Geräusche, elektronisch vorhanden, verknüpfbar, speicherbar und mit dem Entstehen elektronischer Netze damit auch versendbar, austauschbar, ohne physisch im konventionellen Sinne noch existent sein zu müssen: Nicht mehr gedruckt, nicht mehr auf Filmen, sondern für das Auge im Originalzustand gar nicht mehr sichtbar, in elektrischen Impulsen gespeichert, digitalisiert. Dieses Faktum, Texte, vor allem wissenschaftliche Texte, elektronisch speichern, erschließen, zur Auswahl anbieten und an den Nutzer direkt versenden zu können, stellt die eigentliche Revolution dar und wird einen Teil der Bibliotheksarbeit, insbesondere der bibliothekarischen Informationsarbeit, verändern. Für die Bibliothek ist es also nicht so sehr entscheidend, daß Dokumente außer auf Papier, Film und Platte nun auch auf digitalen Speichermedien verfügbar sind, denn das fügt der Bibliotheksarbeit lediglich ein weiteres Medium hinzu, wird einzelne Aspekte der Bibliotheksarbeit beeinflussen. Das entscheidende Element, das in die Beziehung Bibliothek-Benutzer eingreift und in den bibliothekarischen Arbeitsablauf des Sammelns, Erschließens und Verfügbarmachens, ist die elektronische Vernetzung, die den Ort Bibliothek in Frage gestellt. Angeblich umfaßt

Internet schon jetzt rund 10.000 Netze und wird von geschätzt 3 Millionen Computern genutzt.

Wieweit ist dieses elektronische Publizieren Luxus oder Notwendigkeit, wieweit ist es Technik um der technischen Faszination willen und daher von der üblichen Freak- und Kommerzgemeinde als Revolution, als Zukunftsvision promoviert und wieweit ist es wirklich Notwendigkeit und Fortschritt, der der Propheten und Promotoren gar nicht bedarf? Der Geisteswissenschaftler wird vielleicht nicht viel Verständnis für einen derartigen Technikfirlefanz haben, Eilbedürftigekeit ist bei ihm selten gegeben. Der Naturwissenschaftler wird dagegen dazu neigen, das uneingeschränkt als Notwendigkeit darzustellen. Eine lawinenartig anwachsende Wissens- und Informationsproduktion auf der einen Seite - wir kennen sie als zigfach verwendetes Standardardgument von Einführungen in die Informationsarbeit -, eine immer mehr in die Sackgasse geratende, weil viel zu langsame, konventionelle Publizierung und Erschließung dieser Informationen auf Papier, deren Zurverfügungstellen durch Bibliotheken und andere Informationsvermitttler ebenfalls unzumutbar lange dauert. Man hier wird also leicht sagen können, daß der Informationsbedarf der Öffentlichkeit diese Art des Publizierens erzeugt hat. Aber so zwingend war es natürlich nicht. Am Anfang war die Technik, die es möglich machte und die sich ja nicht wegen des schnelleren Informationsflusses entwickelt, sondern weil Leute mit Computern und Software Geld verdienen wollen. Einige Verlage begannen, elektronische Fachzeitschriften zu publizieren, die noch recht herkömmlich vertrieben wurden. Dann kam die Entwicklung der Netze, und mit ihnen die Idee der elektronischen DIstribution auch von Volltexten und nun erst beginnt die Lawine zu rollen, beginnen die Propheten zu prophezeien und die Planer zu planen: World-Wide-Web, Datenautobahn, jede menschliche Geistesregung - um es nicht despektierlicher zu benennen - elektronisch an jeden Arbeitsplatz, in jedes Wohnzimmer und natürlich, das liegt im Trend, gegen Gebühr verkaufen. Schon jetzt kostet ein im Document Delivery besorgtes Dokument häufig mehr als das ganze Zeitschriftenheft. Lassen wir uns nichts vormachen: Nichts entwickelt sich hier nur, weil ein absolut unabweisbarer Bedarf bestünde, sondern in dem für uns Verbraucher undurchschaubar verwobenen Miteinander von echtem und uns von den Produzenten unablässig aufgeschwatztem Bedarf. Von diesem Pseudobedarf lebt die halbe Computerindustrie.

Wenn dann jemand kein Geld haben sollte und kein Terminal, dann regeln wir das durch Subventionen, bezw. nicht wir, sondern die freie Marktwirtschaft, mit anderen Worten: irgend jemand wird's schon regeln. Niemand weiß zwar, wieviel Fortschritt die Menschheit braucht, wieviel wissenschaftliche Entwicklung lebensnotwendig ist, wie viele Informationen die Menschheit verwenden, weil verarbeiten kann, weil das ja glücklicherweise gar nicht alles quantifizierbar und qualifizierbar ist, aber eines weiß man: Es wird immer mehr an Information produziert und da wir technisch in der Lage sind, immer mehr davon zu erschließen und zu verbreiten, laßt es uns auch tun. Zwar ist dummerweise der Mensch das

schwächste Glied in der Kette, weil sich sein Hirn nicht mit *Double Space* und *MemMaker* digital optimieren läßt wie ein Laptop, aber das wird noch entwickelt. Also laßt uns Informationsproduktion mit Informationsbedarf und Verarbeitungsfähigkeit gleichsetzen, wir sind im Trend, der Nutzer und die Öffentlichkeit zahlen es ja. Aber wohin führt das die Bibliothek?

Ein - wenn auch nicht exakt wirklich quantifizierbarer - Bedarf ist zweifellos vorhanden, wie oben beschrieben. Viele Besispiele zeigen das, z.B. die Usance im wissenschaftlichen Bereich, durch das Verbreiten von Preprints, auch in elektronischer Form, produzierte Daten schneller verfügbar zu machen. Auch die uns aus der Bibliotheksarbeit vertraute Mailorder oder das Document-Delivery dienen auf unserem bescheidenen Niveau diesem Zweck, wenn sie auch in der gegenwärtigen Form zum Teil noch oder schon wieder konventionelle Methoden repräsentieren: Ein per Fax versandtes oder als bloße Druckerschwärze gescanntes Image als über Netz übermitteltes Dokument bedeuten moderne Versandtechnik aber eher herkömmliches Dokument. Das Scannen von Altpapier, wie es jetzt schon viele Einrichtungen in größerem Stil beginnen, ist also nur ein Teilbereich der Entwicklung, der auch dauerhaft Bestand haben wird, bei dem es aber mehr um die elektronische Versandmöglichkeit von Druckwerken geht, die damit zwar stärkere Mobilität und Speicherbarkeit erhalten, aber nicht gleichermaßen die inhaltliche Erschließbarkeit der elektronischen Publikation. Allerdings ändert sich bei Mailorder und Document-Delivery bereits die Beziehung Bibliothek-Benutzer. Man muß nicht mehr in die Bibliothek gehen, um zu ordern und das Dokument zu erhalten. Die Bibliothek bleibt aber in den Prozess eingebunden, weil sie entweder im Besitz der Dokumente ist oder eine zusätzliche Dienstleistung anbietet mit Erschließungs- und Beschaffungsleistungen.

Hier bleiben wir also durchaus noch auf bibliotheksspezifischem Terrain und für einen Großteil der von der Menschheit auf papierähnlichem Material produzierten Literatur mag dann hier auch Schluß sein, denn das Verwandeln aller geistigen Altmaterialien in Volltexte hat sicher seine volkswirtschaftlichen und technischen Grenzen. Bei aller Skepsis im Hinblick auf die menschliche Vernunft können wir wohl damit rechnen, daß es hier Einschränkungen geben wird.

Was bedeutet aber die echte elektronische Publikation für die Bibliothek? Der elektronisch gesendete, erschlossene Volltext, womöglich noch multimedial und hyperverknüpft, führt uns in ganz andere Dimensionen. Mit ihm bricht ein weiterer Stein aus dem konventionellen Beziehungsgefüge Bibliothek-Benutzer. Verlage, Buchhandlungen und Bibliotheken verlieren ihr jeweils spezifisches Verfügungsmonopol über das Medium.

Vergegenwärtigen wir uns das .Szenario": Der Autor, sei er nun Person oder Korporation, ist Produzent. Er schreibt in eine Datei, ein Fachverzeichnis, ein elektronisches Journal, oder wie immer man das nennen wird. Und obwohl nun jeder Hacker in seinem Geistesgut herumfummeln kann, wird sich der Autor doch überwiegend der neuen Möglichkeit hingeben, denn sie erspart manche

Auseinandersetzung mit dem Lektor und Verleger, beseitigt auch unerwünschte Zwischenverdiener und nützt der Karriere. Schon bald wird es Statussymbol sein, in bestimmten LAN-Servern vertreten zu sein, wie bereits jetzt für Physiker in Paul Ginspargs Server für Hochenergie-Preprints in Los Alamos. Die letzten Hemmungen des Publizierens werden fallen. Wir wissen, daß schon heute viel Papier, das die Menschheit besser nutzen könnte, durch Bedrucken unbrauchbar gemacht wird, aber künftig erwartet uns Furchbares und für diese ungefilterte Flut menschlichen Denkens und Forschens wird es Datenbasen geben und Netze.

Es wird möglich sein, diese Daten automatisch - wenn auch mit gewissen qualitativen Einschränkungen - über genormte Beschreibungssprachen und Markierungsmechanismen zu erschließen und mit Hilfe offener Netze benutzerfreundlich verfügbar zu machen. Um das alles zu bewerkstelligen, bedarf es, dessen sollten wir uns bewußt werden, wahrscheinlich keines Verlegers, keines Buchhändlers, keiner Bibliothek. Es bedarf des Produzenten, der jetzt auf den Autor reduziert ist, des Betreibers von Datenbanken und Datennetzen, die ja rein technisch und administrativ zur Verfügung gestellt und verwaltet werden müssen und (hier ist der Name .Netz" sehr zutreffend) dem Einfangen der Gebühren zu dienen haben. Vielleicht sind die Betreiber von Datenbanken und Netzen die künftigen Verleger der neuen Medienspezies.

Aber brauchen wir noch Bibliotheken? Scheint da nicht alles, was wir gegenwärtig mit OSI, SUBITO, STN, TIBORDER, UnCover, und so weiter und so fort betreiben, nur Übergangswerk zu sein, aus gewohnten bibliothekarischen Denkwegen heraus entworfen, um Literatur schneller verfügbar zu machen, und am Ende führt der Weg in's bibliothekarische Nirgendwo, weil wir möglicherweise längerfristig gar nicht mehr über diese Medien verfügen können oder müssen, da sie allgemeinverfügbar sind?

Da mutet es belustigend an, wenn die Bibliotheken den aus altgewohnten Tantiemezeiten bekannten Feind *Verleger* orten und mutmaßen, er werde die Bibliothek künftig übergehen. Wozu brauchte der Autor einen Verleger, wo es nun wirklich keinen Sinn macht, etwas eigens zu verlegen, das allgemeinverfügbar ist, da der Autor quasi direkt in die Datenbasis hineinproduzieren kann - theoretisch könnte eine solche Publikation bereits verfügbar sein, bevor sie noch endgültig fertiggestellt ist. Wozu bedarf es eines Buch- oder Medienhändlers, wenn der Pfarrer künftig nicht mehr mit der Bibel in der Hand dasteht, sondern mit dem Flatscreen, eingebaut im Kanzelterminal, das Markus-Evangelium über Internet online von *Christchurch-Data*?

Warum sollten Bibliotheken elektronische Journale oder Texte auflegen, verwalten, archivieren und erschließen, die ja eigentlich nur in einer einzigen Datenbasis erschlossen und retrievalmäßig verklammert zur Verfügung gestellt werden können?

Solange wir unsere Katalogdaten nur brav in Verbundkataloge geben und uns der Netze zum Austausch unserer bibliothekarischen Sekundärinformationen bedienen,

ist ja alles noch so schön bibliothekarisch konventionell. Da fragen höchstens Informationsfreaks mal provokant, wo denn eigentlich die Primär-, die Fakteninformation in Bibliotheken bleibt. Und nun ist sie plötzlich da und niemand will sie mehr von uns haben, weil er zu Hause oder im Büro sein Terminal hat. Stell' Dir vor, es gibt Informationen in der Bibliothek und keiner geht hin. Eine Horrorvision?

Ganz so schlimm wird es hoffentlich nicht werden, es handelt sich beim hier geschilderten Total Electronic Publishing eben nicht um die Publikationsform der Zukunft, sondern nur um eine weitere Publikationsform, der immer eine ganze Reihe konventioneller und elektronisch basierter Elemente der Informationsdistribution zur Seite stehen werden, die der herkömmlichen Bibliothek näher sind. Es geht hier nur um ein Segment der Literaturproduktion, dessen Quantitäten wir noch nicht einschätzen können, in jedem Falle aber um ein wahrscheinlich nicht unwesentliches Segment der zukünftigen Informationsversorgung vor allem für Wissenschaft, Forschung und Wirtschaft.

Es betrifft auch nicht die gesamte Bibliotheksarbeit, sondern nur einen Teilbereich, wird die wissenschaftliche Spezialbibliothek stärker berühren als die öffentliche Gemeindebibliothek, stärker die Informationsarbeit als die Belletristik. Allerdings: Wenn diese Publikationsform quasi einen Alleinverbreitungsanspruch und damit ein Monopol für bestimmte Informationen erzeugt, dann könnten nichtverfügbare Technik und zu hohe Gebühren Schwellen errichten, die bestimmte Benutzerschichten grundsätzlich ausschließen, selbst wenn der Informationsbedarf solcher Gruppen an derartigen Informationen vielleicht gering sein mag.

Insgesamt können sich die Propheten der üblichen bibliothekarischen Weltuntergänge aber wohl zurückhalten: Was Fernsehen und AV-Medien trotz gegenteiliger Voraussagen nicht vermochten, wird auch die elektronische Publikation nicht zustande bringen. Der bereits vor zwanzig Jahren vorausgesagte Untergang von Buch und Bibliothek tritt und tritt nicht ein. Und wenn doch, dann wird sie eher an neuen Betriebsformen bei Sparzwang liegen. Gerade weil die Bibliothek trotz ihres Namens nicht monomedial angelegt ist, wird sie alle Medienrevolutionen bei entsprechender Flexibilität überleben. Aber, wie sagte doch ein großer deutscher Nationalbibliotheksdirektor kürzlich sinngemäß: Nur was sich wandelt, wird Bestand haben. Also sei im Hinblick auf Electronic Publishing doch einmal gefragt:

Wo liegt bei dieser Entwicklung die Nische oder, besser gesagt, der wichtige Platz für die Bibliotheken? Da, wo er jetzt auch liegt, also die Bibliothek als Bücherschrank oder Terminal für die Armen, die kein eigenes Terminal haben?

Vielleicht in der Möglichkeit, den kostenfreien Zugang zur Information für die Wissenschaft und den Bürger zu gewährleisten oder darin, daß Bibliotheken eine Art Filter bilden und dadurch die Informationslawine durch Auswahl konzentrieren und ein wirklich benutzbares Arbeitsinstrument schaffen könnten? Oder in zusätzlichen Qualitäten der Erschließung die die Flut der Informationen effizienter nutzbar machen? Darin, daß Bibliotheken durch Kombination mit herkömmlichen Medien

die Nutzung elektronischer Publikationen optimieren? Aber das würde den Aufbau bibliothekseigener Server bedeuten mit einer Art Bestandsaufbau und Erschließung. Ist das denkbar?

Kreativität und Ideen sind gefragt. Es geht nicht nur vordergründig um die organisatorischen, technischen, personellen und finanziellen Auswirkungen des Electronic Publishing, sondern eigentlich um die grundsätzliche Frage, ob es langfristig solche Auswirkungen in der Bibliothek überhaupt noch geben wird. Selbst in den sehr viel bibliotheksbewußteren USA beginnt man bereits, die öffentlichen Internet-Anschlüsse in den Postämtern zu installieren. Na ja, das ist wohl auch kein gutes Beispiel; angesichts der rapiden Schließung von Postämtern in Deutschland wird es nicht auszuschließen sein, daß unsere Bibliotheken in Zukunft die Paketannahme übernehmen müssen. Warum dann nicht auch das Internet-Terminal?

European Research Libraries Cooperation:
The LIBER Quarterly, 5 (1995), 199-204.

Dissertationen - elektronisch gesammelt und online verfügbar?

ULRICH DÜRR
Biebertal-Bieber

Dissertationen sind nicht nur zu schreiben, sondern auch abzuliefern und zu sammeln - so schreiben es Tradition, Ordnungen und Gesetz vor.

Der Doktorand hat, sofern die Dissertation nicht als

- (a) Verlagsexemplar vorliegt oder als
- (b) Zeitschriftenaufsatz veröffentlicht wurde,

eine in den Promotionsordnungen festgelegte größere Anzahl von

- (c) Druckexemplaren - in der Regel Offsetdruck oder
- (d) Mikrofiches

bei seinem Prüfungsamt abzuliefern, die von diesem bis auf in der Regel 1 - 2 Belegexemplare an die zuständige Hochschulbibliothek abgeliefert werden. Die Hochschulbibliothek wiederum behält mindestens 1 Exemplar für sich und hat 2 "Pflichtexemplare" an die Deutsche Bibliothek in Frankfurt am Main / Leipzig abzuliefern, ein weiteres Exemplar wird aufgrund von Konventionen von der Hochschulbibliothek direkt an die das Sondersammelgebiet "Dissertationen" pflegende Bibliothek der Humboldt - Universität Berlin geschickt.

Verlagsexemplare (a) und Zeitschriftenpublikationen (b) sollen im Folgenden zunächst nicht weiter berücksichtigt werden, da sie bibliographisch eindeutig erfaßt sind - auch wenn es - aus unterschiedlichen Gründen - nicht immer möglich ist, sie als Dissertationen in der Deutschen Nationalbibliographie, Reihe Hochschulschriften (DBH) nachzuweisen. Allerdings kann es auch geschehen, daß von einer Dissertation, die in einer Zeitschrift publiziert wurde, ein maschinenschriftliches Exemplar in den Besitz der Deutschen Bibliothek gelangt und dann in der DBH nachgewiesen wird ohne Hinweis auf die Zeitschrift.

Für die Pflichtexemplare nach (c) und (d) erfolgt, basierend auf dem DFG Projekt "Zentrale Dissertationskatalogisierung" von 1988/89 die Titelaufnahme grundsätzlich in der Deutschen Bibliothek. Diese liefert die Titel in verschiedenen Formen an den zuständigen regionalen Verbundkatalog, der sie dann - im nicht immer einzuhaltenden Idealfall spätestens nach der in dem DFG-Projekt vereinbarten 8-Wochen-Frist nach Eingang bei der Deutschen

Bibliothek - in seinen jeweiligen online erreichbaren regionalen Verbundkatalog aufnimmt.

Aus dem regionalen Verbundkatalog wiederum kann die abliefernde Hochschulbibliothek (ebenso wie bei Bedarf alle anderen Hochschulbibliotheken) den Zentraldatensatz für das bei ihr verbliebene Exemplar übernehmen und diesen mit einem weiteren Lokaldatensatz, der auf die eigenen Bedürfnisse abgestimmt ist (Signatur etc.), anreichern.

Abweichend von dieser grundsätzlichen Vereinbarung über eine zentrale Dissertationskatalogisierung, durch die Dissertationen im Regelfall frühestens 8 Wochen nach Eingang bei der Deutschen Bibliothek nachweisbar sind, sind einzelne Hochschulbibliotheken (so z.B. die UB Gießen) inzwischen dazu übergegangen, die Titelaufnahme von Dissertationen nach (c) und (d) unmittelbar nach deren Ablieferung zentral oder bereits in dezentralen Bibliotheken durchzuführen und diese online (ggf. wesentlich früher als durch die Deutsche Bibliothek möglich) in den regionalen Verbundkatalog einzugeben.

Die Ausmerzung auf diese Weise doppelt erhaltener Titel durch einen sogenannten "Doublettencheck" ist Sache des regionalen Verbundkatalogs.

Ist diese Arbeitsweise und Dokumentation im Zeitalter elektronischer Datenbanken und elektronischen Publizierens noch zeitgemäß und angemessen, welche Alternativen wären denkbar?

1. Es ist davon auszugehen, daß bereits jetzt oder zumindest in naher Zukunft alle Dissertationen nur noch mit EDV geschrieben werden und auch Abbildungen elektronisch erstellt werden können. "Multimedia electronic publishing" ist keine Zukunftsmusik mehr, sondern existiert bereits und wird weiterentwickelt werden.[1]

2. Zeitschriften und Bücher existieren bereits in elektronischer Form. Die Bibliotheken sind, auch wenn die Meinungen darüber noch weit auseinandergehen, vor das Problem der Forderung zumindest nach deren Nachweisbarkeit, irgendwann vielleicht auch Verfügbarkeit gestellt.

1 ERCIM News, No. 20, Jan. 1995 S. 6 ff. Siehe auch G. Stix: Publizieren mit Lichtgeschwindigleit. Spektrum der Wissenschaft, 1995, S. 34-38; M. Grötschel/J. Lügger: Die Zukunft wissenschaftlicher Kommunikation aus Sicht der Mathematik. Spektrum der Wissenschaft, 1995, S. 39-43.1114

3. Die derzeitigen Archivierungsvorschriften in den Promotionsordnungen belasten die Mehrzahl der Promovenden angesichts der oft nur singulären Bedeutung vieler Dissertationen mit einem in Zukunft sicher weiter zunehmenden finanziellen Aufwand, nach dessen Rechtfertigung zu fragen ist.[2]

Eine ideale Alternative [zumindest für Dissertationen nach (c) und (d), ggf. auch (b), sofern davon ein maschinenschriftliches Exemplar existiert] wäre:

Der Doktorand liefert seine Arbeit einschließlich Titelaufnahme und Sachgebietserschließung bereits auf Diskette bei der Hochschulbibliothek ab. Diese überprüft und ändert/ergänzt ggf. Titelaufnahme und Sachgebietserschließung direkt auf der Diskette und übertragt den Zentraldatensatz des Titels, ergänzt durch Lokaldaten online in ihren EDV-Katalog sowie ohne Lokaldaten in den regionalen Verbundkatalog. Gleichzeitig werden Titelaufnahme und Dissertation online der Deutschen Bibliothek übermittelt. Alle drei Weiterleitungsvorgänge ließen sich programmgesteuert in einem einzigen Arbeitsvorgang zusammenfassen. Die Deutsche Bibliothek überprüft sicherheitshalber noch einmal, ob der Titel auch ordnungsgemäß im regionalen Verbundkatalog vorhanden ist, übernimmt die Titelaufnahme online für die DBH und archiviert die Arbeit in einer online erreichbaren Datenbank.

Jeder Interessent kann daraufhin nicht nur wie bisher den Titel im Verbundkatalog maschinenlesbarer Daten ermitteln und übernehmen, sondern sich, quasi nebenbei, auch die Arbeit selbst auf den heimischen PC überspielen und nach Bedarf nutzen.

Welche Probleme wären zu lösen?

- Die schwierigste Frage dürfte die des Copyright für elektronisch verfügbare Texte sein, die jedoch hier nicht beantwortet werden kann. Das Problem ist als äußerst drängend bekannt und wird in den zuständigen Kreisen auch schon intensiv diskutiert.[3]
- Alle Hochschulbibliotheken sind bereits Teilnehmer des Wissenschaftsnetzes (WIN) des DFN-Vereins, eventuell noch nicht angeschlossene wissenschaftliche Bibliotheken müßten sich anschließen. Die Überwindung möglicher Engpässe bei den Übertragungskapazitäten fällt in den Zuständigkeitsbereich des DFN-Vereins. Eine Verknüpfung des Literaturnachweises in den

2 M. Hänsel-Hohenhausen: Bücher, die nie gelesen werden? Forschung und Lehre 12/1994, S. 542-543.

3 U. Schmitz: Diebstahl ist die beste Werbung. Die Zeit Nr. 5, S. 78, 27.1.95.

regionalen Verbundkatalogen mit dem Originaltext im Datenbestand der Deutschen Bibliothek ist mit Hypertext-Verfahren im Prinzip möglich, der online-Zugriff auf die Bestände der Deutschen Bibliothek ist technisch ebensowenig ein Problem wie der derzeit schon mögliche Zugriff auf die Bestände bereits existierender und arbeitsfähiger großer Datenbanken.

- Geräte- und Software-Ausstattung der teilnehmenden Bibliotheken sind so zu gestalten, daß Kompatibilität herrscht, ggf. sind hier die Hersteller in die Pflicht zu nehmen.
- Bei der Neueinführung / Weiterentwicklung von Softwaresystemen ist ebenfalls auf Kompatibilität mit den vorangegangenen Versionen zu achten - auch 10 Jahre und ältere Texte müssen noch ohne Probleme zumindest im Bibliotheksbereich online abruf- und lesbar sein. Auch dies ist jedoch ein Problem, mit dem sich bereits existierende Textdatenbanken auseinandersetzen müssen, das also im Prinzip nicht neu ist, nur auf vermutlich erheblich größere Datenbestände anzuwenden wäre.
- Dem Doktoranden sind vor dem Schreiben der Arbeit genaue Anweisungen über Titelgestaltung/Titelaufnahme, Sachgebietserschließung und nutzbare Software zu geben.

Nutzen - Kosten - Relation:

Grundsätzlich sollten - wie die Erfahrung auch auf vielen anderen Gebieten lehrt - von der verstärkten Verwendung elektronischer Systeme weder Arbeitskrafteinsparung noch finanzieller Gewinn erwartet werden: Arbeitserleichterungen und -beschleunigung auf der einen Seite stehen zusätzliche, mindestens gleich qualifizierte Arbeitsanforderungen auf anderen Gebieten gegenüber. Änderungen sind jedoch im wesentlichen beim Benutzerkomfort zu erwarten.

Bei ca. 20.000 jährlich zu archivierenden Offsetdruck- und Mikrofiche-Dissertationen in Deutschland[4] wären pro Jahr vermutlich ca. 12 bis 50 Gigabyte Speicherkapazität bei derzeitigen Kosten von ca. DM 1.000 pro Gigabyte (mit fallender Tendenz) nötig, d.h. die Archivierung einer Dissertation würde maximal DM 3,- Speicherplatz kosten.

Die Mehr"arbeit" für die zusätzliche Textspeicherung neben der bisherigen elektronischen Titelaufnahme und -weiterleitung würde - nach ggf. einmaliger Softwareentwicklung - so gut wie nicht ins Gewicht fallen

4 Deutsche Bibliothek: Jahresbericht 1993, S. 25.

Dem stünden gegenüber:

- ein erheblicher, finanziell nicht zu beziffernder Zeitgewinn: die weltweite elektronische Verfügbarkeit des Originaltextes von Dissertationen könnte in 2-3 Arbeitstagen im Gegensatz zu bisher mindestens 8 Wochen nur für den Titelnachweis in Deutschland erreicht werden.
- Einsparungen
  - -- im Bereich des Personals
    - --- bei der Erfassung, Archivierung und Weiterleitung der Dissertationen an die Deutsche Bibliothek;
    - --- bei der (nur noch in Ausnahmefällen nötigen, dann mit Kostenerstattung verbindbaren) Ausleihe;
  - -- bei den (steigenden) Transportkosten (und damit zugleich eine verringerte Umweltbelastung);
  - -- an vorhandenem, dringend benötigtem Magazinplatz und bei zukünftig zu bauenden Magazinen (auf der Basis der Preise von 1984 kostet der Neubau von 1 qm Hauptnutzfläche Magazin, auf dem vermutlich keine 1000 Dissertationen untergebracht werden könnten, DM 4.350!).[5]

Die Bibliotheken sehen sich bereits jetzt mit den Problemen der elektronischen Speicherung und Bereitstellung von Texten konfrontiert, die unabhängig von der Dissertationsarchivierung gelöst werden müssen. Eine elektronische Dissertationsarchivierung wäre also entweder ein Nebenprodukt einer sowieso laufenden Entwicklung - allerdings zunächst einmal in viel größerer Dimension - könnte aber auch als - ggf. auch mit EU- Mitteln zu finanzierendes - Modellprojekt (Telematik im Bibliotheksbereich!) eine Vorreiterrolle spielen.

Für die Dokoranden würden sich aus einem solchen Vorgehen erhebliche Erleichterungen und auch finanzielle Einsparungen ergeben, die ggf. auch die Bereitschaft begründen könnten, sich an den Kosten der elektronischen Archivierung anstelle des bisherigen Druckzwanges mit einem gewissen Betrag

5 Wissenschaftsrat: Empfehlungen zum Magazinbedarf wissenschaftlicher Bibliotheken, 1986, S. 76 ff.

zu beteiligen. Im Gegenzug sollte dafür die kostenlose Bereitstellung (so wie bisher die kostenlose Nutzung in Hochschulbibliotheken, aber auch in der Deutschen Bibliothek selbst) der elektronischen Texte gewährleistet werden, da zu befürchten ist, daß die Kosten eines Gebührenerhebungssystems denen der Nutzungsgebühren zumindest gleichkommen oder diese sogar übersteigen könnten.

Da die bisherigen Vorschriften der Promotionsordnungen über Drucklegungs- und Ablieferungsverpflichtungen im wesentlichen auf, den Nutzern gegenüber als Verpflichtung betrachteten, die Promovenden allerdings finanziell erheblich belastenden bibliothekarischen Interessen und Interventionen beruhen, erscheint es notwendig und angemessen, daß erste Aktivitäten zu einer Änderung auch von Bibliothekaren ausgehen - ehe der Druck von anderer Seite zu groß wird.

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The LIBER Quarterly, 5 (1995), 205-210.

Development of the Integrated Library System in the Slovak Technical Library

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Introduction

This paper is aimed at discussion of the library and information computerization in the Slovak Technical Library, Bratislava. The history and the development of the integrated library and information system is described. The crucial problems of integration within the LAN represent the priorities of the current library automation tasks.

The paper will deal with:

- main automation strategies in STL (the wider context), especially relating to
- integration,
- networking,
- object-based modelled technology,
- adherence to standard (compatibility) (CS MARC, UNIMARC, EC, ISO),
- flexibility of hardware and software (constant innovation and dynamic change),
- retrospective conversion, quality of records and databases,
- internal technological unification,
- background (brief review of progress of the automated library processes in STL),
- recent advances in new information technology implementation (online cataloguing, OPAC, acquisitions, circulation control, periodicals control, bibliographic and online information services, administrative support and text processing),

- important problems of the integration (communication format, systems unification, organization of work, unity of technological process, modular system development),
- perspectives of new information technologies in STL (hypertext, knowledge organization and representation techniques, international standards, text processing).

Brief history (1975-1986)

The history of the library and information processes computerization in the Slovak Technical Library (STL) dates back to the early 1970s. The first system in operation was the union computerized catalogue of foreign books (the foreign books accessions - PZK) developed in 1973. Actually, it was the first computerized library system in Slovakia, followed by some pioneering steps of STL including the book-form catalogue of serials, serials circulations service, the book-form catalogue of standard, and others. Within the first decade of the information systems development an important role has been played also by the SDI service (PZK) and retrieval service (databases INSPEC, EMIS).

During the 1990s the situation has been rapidly changed and resulted in more systematic approach to the library automation. A number of national research projects has been launched, and, consequently, the local computing centre with computers of its own (SM series minicomoputer, the product of the former Council for Mutual Economic Aid, COMECON)) has been established. As a result, the automated circulation control system has been developed using SM4-20 and the local software application by the end of 1990. Then the online cataloguing project was completed and the first PC-based OPAC available in Slovak libraries, as well. At the same time the computerized union catalogue within the regional library network (in Bratislava) has been designed.

Development (1986-1991)

At present we have designed the integrated version of the STL automated library and information system. Some of the systems in operation were re-designed so that the mutual links and cooperation of sub-systems can be improved. We have been involved in the preparation of the first unified interchange format for Czechoslovakia (IKIS exchange format developed in cooperation of Matica slovenska - Slovak National Library and the National Library of the Czech Republic) (at present being revised into CSMARC). Our OPAC database has been developed as a special library application of micro CDS/ISIS, the software package distributed by UNESCO. We have accepted the IKIS exchange format regarded as the most important integration means within the library system.

The Automated Books Circulation Control was completed as an online system composed of users database and the circulation database, both making use of the bar-code identification (again being one of the first libraries in CSFR).

The special collections systems were developed comprising the SDI services of busineas and trade literature accessions, online catalogue of standards, and others. Special collections include especially business and trade literature, industrial catalogues, standards and patent - covering all technical subjects.

Our OPAC (local database) conception and realization has brought about a great success for STL within the library system of Slovakia. We have used the micro CDS/ISIS software application, which was distributed to many libraries and other institutions (more than 60) in Slovakia. The idea of mutual cooperation should in future result in realization of the union catalogue of technical literature in Slovakia (local accessions being stored in STL - either through disks or within the communication network) following the design of the cooperative cataloguing.

The online cataloguing system, as well as the acquisitions system, are now in operation covering collection building in STL. Both systems are developed using PCs (today 8 LAN workstations) and micro CDS/ISIS features of database development, search, export, import, printed outputs. The basic functioncal structure of the acquisitions system is composed of order and desiderata processing, accessions, printed listings, data transfer to OPAC and cataloguing department, directory of suppliers, international exchange of publications. Created accession records are then transferred to the cataloguing system and completed in the form of the IKIS-CSMARC Interchange Format. The retrospective conversion is developed as a parallel task, at present we have completed our database of book catalogue records comprising 6 years (1991-1986).

As for the circulation control, it is aimed at online processing of circulation transactions using databases of users records respectively of circulation records. For the identification of book numbers and users is used bar-code (here STL was again a pioneer to use bar-code within Czechoslovak libraries). The circulation system runs on minicomputer SM-4-20 and it is going to be re-designed for PCs.

The serials and periodicals control system design will also be completed within the whole library network. The present catalogue of periodicals (which has run on the external computer) has been converted into a new format on OPC. The data structure will be then integrated into the STL OPAC. The Current Contents Service of periodicals has recently been introduced. Further functions (acquisitions, circulation, cataloguing, etc.) will be designed as parts of the integrated system in LAN.

The automated reference and bibliographical services including online search services from our catalogue (SDI, retrospective retrieval services) are going to cahnge towards the use of databases available on CD-ROM products.

As for the administrative management support we have been using some word processing systems, as well as the desk-top publishing system. We hope the unified word processor can be applied in terms of our integrated system as a whole.

In line with our automation strategy the upgraded hardware was purchased last year including 3 (prospectively mutually linked) LANs, each covering the different sites (buildings) of STL places in different parts of Bratislava. However, the problem of the hardware and software innovation within the dynamic system evolution is still a permanent task.

Integration

As all the subsystems are interdependent, the integration within the internal library network becomes the most important task of STL research and automation. The question is, how to treat the outdated automated agenda so that the valuable data can be preserved and used within the new integrated system.

Another problem emerging from the integration effort and new technology implementation covering especially LANs with file servers, routers, communication nodes and workstations is connected with the internal communication format establishment. The variety of software systems used within STL represents a serious obstacle to the system'm integration. Furthermore, the present systems are marked by a variety of development stages.

Nevertheless, we have designed the model of our integrated library and information system with the intention of its further completion in terms of networking. The methodological issues of the system unification prior to the internal software application tend to emphasize the adherence to standards in the field of data creation and exchange, as well as links to the wider national or international external databases. Therefore we are now at the stage of the new approach to the methodology development including the communication format as a unified data structure compatible with national and international standards, the unified user's interface development, the unified search technology and retrieval languages application, the unified design of statistics processing etc. This approach enables us to introduce the modular principles of the information systems design and object-based requirements modelling in terms of flexibility and compatibility. In line with capacity and expandabiblity requirements the CD-ROM technology and online catalogue integration is supposed to be established.

Our system has proved the requirements of necessary changes in the organizational issues of library work as a result of automation, e. g. acquisitions (division of labour following technical processes - desiderata, order processing, accessions processing, etc.). We suppose that the successive detailed specification of modules will result in the modular object-based specification of the integrated system within the whole library. Large databases are supposed to be stored on

CD-ROM servers (general retrospective catalogue of books, periodicals and special collections). As soon as the standard methodological tools are defined (unified data structure, user interface, input and output formatting, common comand language for online interactive retrieval, unified technological processes), the application software tools within the network environment can be developed, or even purchased from vendors. The standard modules on the methodological level might be perspectively applicable in other technical libraries in Slovakia. We hope that the advanced object-based specification method could be of use for the consequent object-oriented software development.

Perspectives

Introduction of new information technology emphasizes some changes in our library work.

We suppose we should take into consideration the following issues:

- the users'requirements,
- closer teamwork outside the traditional organizational structures,
- link of our databases to the administrative an beaureaucratic systems,
- interlibrary national and multicultural communication,
- adherence to standards (European Community, ISO, CSFR standards, Guidelines for an informatics architecture).

We will go on in our bibliographic and catalogue records production and in linking our databases to other automated library systems so that the better access to knowledge in European libraries can be achieved.

We will try to establish connections of our OPACs with the European networks, our acquisitions system with the acquisitions systems cooperation (EDIFACT) with the new document supply features (cooperation of publishing houses and libraries.)

Introduction of new library and information services is another important task - e. g. hypertext technology, CD-ROM databases, desk-top applications.

In the fields of telematics for library we have started with LANs, the next stages will include transition to WANs, standard user-friendly interface, electronic mail.

It is obvious that it is no longer programming, but system planning, design, data definitions and structures, information flow and technological specification of application that form the basic parts of the forthcoming developments. We also have an intention to move from quantity to qualitative features of library (especially our databases) and automation technology (including users' needs

modelling, object oriented cognitive structures of learning and understanding - i. e. better use of information and knowledge).

European Research Libraries Cooperation:
The LIBER Quarterly, 5 (1995), 211-213.

LIBER Division for Library Administration and Management

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An ad hoc board drafted a paper regarding the division's aims. During a meeting in the context of LIBER's next Annual General Meeting in Leuven/Louvain these aims will be discussed with the members of the division. Thereafter a programme of action for the following two to three years shall be drawn up. This meeting takes place on Tuesday, 4 July, at 10 0'clock. All members of the Division for Library Administration are cordially invited to take part.

Aims of the Division (draft)

1. Basic Aims and Responsibilities

The Division for Library Administration and Management wants

- to familiarise the library directors and their deputies with new developments in library management.
- to inform the managerial staff (e.g. Departmental Heads) of the basics of library administration.
- to promote the exchange and comparison between the various methods of administration and management in European countries.
- to take particularly into consideration the needs of the libraries in Eastern Europe which in part have a special need for know how.
- as a matter of principle to further he personal exchange of experience between librarians in leading positions across political, linguistic and cultural borders.

2. Main Issues

(During the LIBER Annual General Assembly 1995, the needs and wishes of the members are to be recorded in a pre-conference. As a result, the following list of issues can be supplemented or new priorities added.)

a) Current Issues (First Priority)

- efficiency measurement
- quality management
- possibilities or limits of the New Public Management
- marketing strategies for library services and products
- lean management: change of values in professional life; the importance of the human potential
- staff management (selection, assessment, training and further education of members of staff, styles of leadership, communication)
- the research library in the electronic information age - implications for the library manager
- planning and development of services

b) General Issues (Second Priority)

- communication and improvement of the instruments of business management of libraries (e.g. comparative library statistics and performance control)
- fund raising
- training and continuation training: increased demand for bordercrossing possibilities with mutual acceptance of training; common contents: curricula

3. Methods of Communication

As the target groups are leading librarians and heads of departments who have several years of professional experience, one can assume that they intend to participate actively and will welcome an exchange of experiences. Therefore, the prevailing method of communication chosen will be workshops with plenty of opportunity for an exchange of experiences. Brief reports should be of an introductory nature. In order to clarify the needs, consultations of all registered

members of the Division for Library Management and Administration are to take place in 1995 and later on at regular intervals.

4. Links to other Groups

Regular contact with the Library Architecture Group.

Members of the ad hoc board are:

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LIBER Division of Access

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General aim, membership and Divisional Committee

The main aim of the Access Division of Access is to develop and improve access to European collections in libraries, both by making the collections better known and by promoting the application of new technology to improve remote access to materials and acknowledgement of collections through network access. The division is opened to all libraries that need or want to reach it according its main frame of aims.

At the present, the Division of Access of LIBER is constitued by a total number of 65 libraries from different types and countries, according to the registrations confirmed since July 1994 until the end of February 1995. Most are academic and university libraries and library institutions and organizations. Countries represented are Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Russia, Slovenska Republic, Spain, Switzerland and the United Kingdom. The scope of membership and countries is reflecting the wide scope of LIBER membership at the present.

According to the LIBER Statutes (18.4.), the Division of Access is administered by a committee formed by the Divisional Chairman, the Divisional Secretary and three ordinary members. The Chairman of the four divisions of LIBER (Collection Development, Preservation, Access and Library Management and Administration) of LIBER were elected during the past General Assembly in Göttingen (July 1994). Since November of 1994, the Divisional Committee is formed on the basis of provisional nominations conformed by the LIBER President provisionally, to be conformed by the members of the Division at the first meeting of the Access Division settled on Tuesday, 4th July of 1995 in Leuven, during the celebration of the annual conference of LIBER (3-8 July 1995, Leuven). Divisional Committee of Access is composed, at the present, by Vinyet Panyella (Biblioteca de Catalunya, Catalonia/Spain) as Chairman, Birgitte Lau (University Library of Roskilde, Denmark) as Secretary and Peter Bockhorst (Universitätsbibliothek Münster,

Germany), Christine Deschamps (Bibliothèque Universitaire de l'Université Paris-V René Descartes, France) and Suzanne Berke (National Szecheny Library, Hungary). The Divisional Committee formally met in 17th January 1995 for producing an outline programme, according to the need of stablishing the programme of work of the Division as it was agreed in the Executive Board meeting of 17th December in Copenhagen. The Divisional Committee dealt about the Access Division itself concerning the scope and concrete aims, access division issues, liaison with other groups, the Library Programme of the European Union; drafted an initial plan of activities and also the agenda for the first Access Division Annual Meeting.

Divisional definitions

Scope

Three areas of work are identified relating to the broad concept of Access within the European research library framework:

a) Availability of collection data in computerized form

b) Standards

c) User services

Aims

On the most general level, the aim of the division's work must be to address the various restrictions to access, found at various levels, hindering free availability of all informations to all users. Restrictions are such:

- geographical and political barriers
- underdeveloped technology
- funding problems
- preservation problems
- censorship
- legal/copyright

The Divisional committee found it necessary to start its work by collecting information from all members as to the state fo art at their libraries with respect to access. The scope is so broad that a focus must be chosen on the basis of the most urgent access problems and interests of members of libraries. On the basis

of the incoming answers from the member libraries the Committee will outline what should be taken up as the Division's main issues at the present.

Issues

Some issues from the broad scope of access were remarked:

a) Technological issues: expansion connections to all European countries and the "superhighways of information"; retroconversion of catalogues; electronic full-text access, etc.

b) Standard issues: transparency of character sets; network standards; various format standards (MARC, authority files, etc.;

c) Funding issues: ways to support the transition to computerized access for libraries with great of funding problems, etc.

The Divisional Committee considered various strategies with respect to types of activities to organize, keeping the proportional emphasis on research on specific projects and on meetings or seminars.

Liaison with other professional groups

The Divisional Committee surveyed various possibilities of liaisons with other professional groups concerned in access issues, among them:

- IFLA ILL Standing Committee;
- IFLA Information Technology Standing Committee;
- ISO
- EBLIDA
- ARL
- OCLC
- EU-DG XIII Library Programme
- ALA / LITA

The Divisional Committee will also seek information and contact to various digitalization projects and collaboration with other LIBER Divisions also will be sought on the basis of joint projects. The Committee agreed that the Access Division of LIBER should play a role in establishing a feed back to the administration of the Library Programme of EU-DG XIII in the form of

evaluative comments of impact of the Library Programme and the functionality of national focal ponints.

Initial planning of Divisional Activities and Draft of the Agenda for the first Access Division Annual Meeting

Enquiry to Divisional members

The Divisional Committee agreed a next planning of an enquiry to be sent out to all LIBER members focused on:

a) Feedback from members as to wishes for priorities with respect to preferred project, working methods, etc.;

b) Libraries should indicate their state of art with respect to computerized or remote access to their collections, access policies and immediate plans for changes.

To ensure as complete information as possible, one person from each member country will be contacted to answer questions of access in within the national framework. Conclusions of the enquiry will then be presented at the annual Division Meeting in Leuven.

Draft of the Agenda for the first Access Division Annual Meeting

The Divisional Committee drafted the agenda for the first Access Division Annual, to be officially announced through the programme of the LIBER annual Conference.

The Access Divisional Annual Meeting will take place on the 4th July 1995 at Leuven, from 9 a.m. to 13 p.m., divided in two main parts:

9.00-11.00:

- General Assembly of the Division;
- Presentation of the Divisional Committee;
- Presentation, discussion and adoption of the programme of activities of the Division of Access;
- Proposals for action.

11.15-13.00:

Professional Input: Integrative pannel discussion on the theme "What are the principal restrictions to access". Input from 3-4 pannel participants, each 15 minutes. Some ideas were elicited as:

- penetration of major library programme projects in Europe;
- restrictions to access due to local conditions (policies, buildings, funding ...);
- access to information vs. access to the physical library;
- "effective success": actually getting your hands on the information.

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Mass Deacidification Reports Issued by the Library of Congress in December 1994*

Over the past two years, the Library of Congress continued its commitment to enhance and encourage the development of mass deacidification technologies through a two part Action Plan that was approved by Congress.

Under Phase A of the plan, the Library pursued refinement of the diethyl zinc (DEZ) process. Phase B permitted the Library to offer a program of evaluation and testing to other promising deacidification technologies; under this provision, Preservation Technologies, Inc. (PTI) of Pittsburgh asked the Library to evaluate its Bookkeeper deacidification process.

The first 30+ pages (the textual pages) of separate reports on these two processes are available on Internet through LC's Gopher. Access them by telnetting to Marvel.loc.gov" and logging in as "Marvel." To locate the 2 reports on Marvel, select "Libraries and Publishers (Technical Services)," "Preservation at the Library of Congress," then "Mass Deacidification: Reports.". Free paperbound copies of the Bookkeeper and DEZ reports (including all of the appendices not reproduced on Internet) can be obtained from Kenneth Harris in the Preservation Directorate at the Library of Congress.

With the DEZ process, the Library conducted a series of planned test runs in the Akzo Chemicals deacidification plant in Texas and succeeded in eliminating process-related problems that were experienced earlier with the DEZ technology. However, we note with disappointment that Akzo Chemicals withdrew from the deacidification business this past spring and terminated its DEZ license with the U.S. Commerce Department effective in September 1994. The Library has not requested Congressional support at this time for a DEZ initiative because of projected high DEZ capitalization costs and because of encouraging developments with the Bookkeeper process, which affords lower capitalization costs along with other attractive features.

Under the second phase of the Library's Action Plan, as indicated above, a Library-appointed evaluation team studied the Bookkeeper deacidification process. An earlier generation of PTI equipment, known as "Bookkeeper II", was being used by PTI when the Library's evaluation team initiated its examination of

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the Bookkeeper process over a year ago. Based upon results obtained with that earlier Bookkeeper equipment, the evaluation team concluded that the Bookkeeper process demonstrated the potential for meeting the Library's technical requirements for mass deacidification. The group indicated further that the process already meets many of the Library's specifications. The technical team also recommended that the Library work with PTI to enhance the Bookkeeper process.

While the evaluation team was drafting its observations about the results achieved by Bookkeeper processing and about subsequent accelerated aging and independent lab testing of materials treated with Bookkeeper II, equipment, PTI and the Library pursued two important, complementary activities:

- PTI engineered and installed its new "Bookkeeper III" equipment, with a current capacity for treating up to 100.000 books per year and capable of being cloned to handle a greater volume; and
- the Library initiated a limited contract to treat 600 additional text books to assist PTI in addressing some of the issues that were being identified by the evaluation team.

In light of treatment results obtained with the Bookkeeper process, the Library presented Congress in December 1994 with a second deacidification Action Plan, consisting of two phases that will run concurrently for two years (1995-97), if the plan receives Congressional approval.

Phase A: A brief enhancement initiative with the Bookkeeper process to be followed by a limited production effort. Over a two year period, this demonstration contract would result in treating 72.000 books. The focus will be on achieving an improved product at lower cost. Since the Bookkeeper process does not impart odors or cause physical damages to treated materials, we expect to make rapid progress with process enhancement. We anticipate that most of this effort will be devoted to the limited production initiative, resulting in deacidification of actual books from the Library's permanent collections.

Phase B: The goal of this phase of the Action Plan, with guidelines to be announced in the *Commerce Business Daily*, is to encourage and evaluate other technologies that can demonstrate a potential to meet or exceed the Library's deacidification requirements (complete deacidification, adequate alkaline reserve, an increse in the life of paper by at least three times its normal expectancy) without damage to collections. Tht Library is also hopeful that, during this phase, a U.S.-based company will recognize the potential for

commercialization of the DEZ technology and develope a facility for deacidifying books through this process.

The Library's proposed two year plan reflects our determination to support the active development of mass deacidification technologies. We remain hopeful that our dedication to this effort, combined with mutual involvement by other like-minded institutions, will result in fulfilling the continuing interest of the library and archival communities in resolving one of our most pressing preservation challenges.

Please feel free to contact one of the persons listed below if you desire further information or if you would like to discuss the reports about Bookkeeper or DEZ or the Library's proposed deacidification Action Plan.

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ISO Activities in Preservation

The International Organization for Standardization is involved in preservation activities through Subcommittee 10 of Technical Committee 46. Subcommittee 10 has, in turn, four working groups involved in specific aspects of preservation.

Subcommittee 10 and all of its working groups will be meeting in May 1995 in Ottawa, Canada. A report of the progress made at these meetings will appear in issue 3/1995 of the *Newsletter/International Federation of Library Associations and Institutions (IFLA)/Section on Conservation*. The following reports are based on information provided by the convenors of working groups 1 and 3.

ISO/TC46/SC10/WG1

WG 1 deals with Permanence of paper for documents and is chaired by Per Olof Bethge of Sweden. The initial project of this working group resulted in the publication of *ISO 9706:1994 Information and documentation - Paper for documents - Requirements for permanence*.

Subsequently, the working group developed *ISO CD 11108 Information and documentation - Archival papers - Requirements for permanence and durability* which is now being prepared for distribution and balloting as a draft International Standard.

At its last meeting in Stockholm, Subcommittee 10 resolved to create a new work item dealing with Standardization of permanent and durable boards used for book binding and for document storage purposes. This work item was allocated to WG1 and the group will initiate work on this project at its meeting in May.

ISO/TC46/SC10/WG3

The aim of WG3 is to elaborate a standard on Document Storage Requirements. Although the work is currently an internal paper not yet fully discussed within the WG, it is hoped that at the Ottawa meeting of TC 46 in May 1995, the work item might be approved for distribution and balloting as ISO CD 11799.

The work on this item began in January 1994, when H. Bansa was nominated project leader. The first step was to elaborate a Concordance of relevant national

standards, as they exist in Great Britain, Italy, the Netherlands, Russia and the U.S.A. On the basis of this concordance a first draft was developed. Papers were presented at the May 1994 meeting of TC46 in Stockholm. The draft was discussed there and subsequently by correspondence, primarily by Mirjam Foot, Sergio Palazzi and Peter Adelstein. Following two subsequent drafts, an intensive discussion took place at two meetings of WG3 earlier this year in Munich and in London. The result will be the fourth working draft which will be discussed in Ottawa.

The standard covers construction and equipment for library buildings and installations suitable for long-term storage of archives. Attention is paid to security, climate and inner structure including illumination, ventilation and environmental controls. Although the standard is not intended to cover repository management, it cannot avoid dealing with issues such as cleaning, protective devices for the collections, optimal storage positions and disaster preparedness plans.

Because the document continues to be under study and subject to change, it should not be used for reference purposes until its formal adoption as an International Standard. The working document can, however, be made available to interested individuals.

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LIBER Annual Conference 1995

Electronic Resources and Quality Management

5 - 8 July 1995

Universiteitsbibliotheek K. U. Leuven

TOPICS:

INTEGRATION

ARCHIVING, PRESERVATION, AND LEGAL DEPOSIT

QUALITY AND QUALITY MANAGEMENT

COOPERATION IN BELGIUM

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PRELIMINARY PROGRAM

KnowRight '95

International Congress on Intellectual Property Rights for Specialized Information, Knowledge and New Technologies

21 - 25 August 1995, Vienna, Austria

Vienna University of Technology

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Austrian Computer Society
Austrian Ministry for Science, Research and Arts
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