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Electronic Records are Records

After almost four years, the saga of the White House PROFS records from the Reagan Administration came to a close on January 6 with a landmark decision by Judge Charles Richey, that electronic mail and other computer generated records of the Federal government must be accorded the same protection as any other records under the Federal Records Act (FRA). The decision, which applies equally to a second case, relating to records of the Bush Administration which had been joined with the original PROFS case, completely rejects arguments being made by the Justice Department and the Archivist of the United States for the past several years.

Specifically, the judgment prevents the Executive Office of the President (EOP) and National Security Council (NSC) from destroying these or future computerized records until enforceable new guidelines can be written and assures the plaintiff, unless there is further appeal, that the original Freedom of Information Act requests for access to these files will now be acted on.

This decision, which I am convinced was absolutely right, forces archivists to confront electronic records management seriously. Concrete, implementable, program guidelines need to be developed immediately and the functional requirements for archival management of electronic records must be articulated and agreed to by the profession.

> "The Court finds that the EOP and NSC have violated the FRA and that their record keeping practices are arbitrary and capricious under the APA. The Court also finds that the United States Archivist has failed to fulfill his statutory duties under the Federal Records Act. The Court will remand this case to the Archivist to take immediate action with the assistance of the Attorney General pursuant to the Federal Records Act (FRA) with notice to Congress to take all necessary steps to preserve the electronic records here in question."

So read the conclusions of the thirty two page opinion delivered by U.S. District Judge Charles R. Richey in cases pertaining to the electronic records of the Reagan and Bush Administrations. The case originally filed against Ronald Reagan et.al. by Scott Armstrong et.al. in January 1989 to prevent destruction of the PROFS and other electronic files of the White House was joined in December 1992 by similar case against the Bush Administration. In the initial case, the court ruled on procedural grounds that the Administrative Procedure Act (APA) provided for judicial review and that there were unresolved factual issues. The Federal Appeals court upheld the decision that the Administrative Procedures Act provided for limited review of the NSC and EOP recordkeeping guidelines pursuant to the Federal Records Act but excluded review of the President's compliance under the Presidential Records Act (an unfortunate decision which I would hope archivists would work to rectify through legislative amendments).

The question remaining before the Court, therefore, was "whether on this record . . . the Defendants have complied with the statutory requirements and whether the guidelines are reasonable or sufficiently clear as to provide adequate guidance to personnel employed by the Defendants in their maintenance and preservation of federal records. The other issue is whether the United States Archivist has fulfilled his statutory duties under the Federal Records Act".

In This Issue

The Court held that:
- the records keeping practices of U.S.Federal Agencies are subject to review under the FRA
- the issues are whether the agency properly interpreted the FRA and if its guidelines are adequate

"The statutory command from 1943 through the last amendment by Congress in 1984 shows a clear legislative purpose that records of historical value involving the public regardless of physical form, shall be preserved, particularly where such material reflects the function, policies, decisions procedures, operations or other activities of the government".

The court emphasized the "plain language" and intent of legislation and the fact that the FRA was intended to include materials 'regardless of physical form or characteristic'. It did not rule that "all material on these electronic communications systems are records", but that "some of the material stored on these systems do meet the definition of record under the FRA and must be saved". Moreover, and of critical importance, the Court ruled that paper printouts are not the same as the electronic records themselves, citing the absence in printed copies of structural and contextual data held by the system such as distribution lists and time of receipt stamps. "Such information", the Court ruled,"can be of tremendous value in demonstrating what agency personal (sic) were involved in making a particular policy decision and what officials knew, and when they knew it."

The Court noted that NARA guidelines state that even if the same information is on paper and disk agencies should consult with NARA about disposition. The Court also found agency "record keeping procedures are arbitrary and capricious because there is no oversight of the agency staff by record keeping personnel" and again cited NARA's Records Management Handbook which stated that 'only records officers should determine record or non-record status of files'.

"Since the Court has determined that computer materials are not simply convenience copies, these computer materials are subject to the FRA and the Archivist and the Defendants must institute immediate provisions for periodic review to ensure the adequacy, effectiveness and efficiency of the record keeping program".

The Court found the 1982 Federal Records Manual inadequate, but gave the 1989 Manual better marks, nevertheless citing the failure of the Defendants including the Archives to provide adequate guidance. In terms of internal agency guidance it stated that "at the very least, compliance with the FRA requires that staff be fully advised of the definition of a federal record", and cannot give staff the authority to make the determination on their own. Even the latest NSC guidelines were judged arbitrary and capricious "because staff are told that electronic mail does not constitute record material and need not be saved once a paper copy has been printed out."

While the Court's action was a strong as it could be, and its language at times almost angry, the effect in this specific case will depend very much on how the Bush Administration and Archivist Don Wilson choose to act because 1) the Court was precluded by the Appeals Court from dealing with Presidential records and the Administration could argue that much of this material falls into that category, and 2) because formal guidelines given to employees will have less impact than the prevailing corporate culture in determining what is really done in the NSC and EOP. On the other hand, the conclusion of the case extends the ruling to all other Federal Agencies and requires the archives to develop reasonable guidelines for all computer records. If they do this, the whole battle will be worth it.

What about the content of the PROF's tapes? The suit was about whether they were records and should be kept so that FOIA requests could be processed. If they are kept under the FRA, the next step would be to process the FOIA's. The government could still appeal Richey's decision or the Bush Administration with help from the archivist could still act to exclude the bulk of the records as Presidential. My guess is that we won't see anything for a very long time, if ever. In the meantime, I hope archivists throughout the U.S. will lobby Congress for extension of judicial review to the Presidential Records Act and press the National Archives to develop enforceable guidelines for electronic mail and other electronic office records.

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CONFERENCES

COALITION FOR NETWORKED INFORMATION

The Fall 1992 Meeting of the Task Forces of the Coalition for Networked Information on November 19-20 was attended by over 400 people from 200 organizations. For a summary of the meeting as seen by its organizers (and for information on how to obtain all the background papers) contact the Coalition ftp file server at ftp.cni.org in the directory /CNI/tf.meetings/1992b.fall, or write the Coalition at 1527 New Hampshire Ave., NW, Washington DC 20036 or phone 202-232-2466.

This was my first meeting of the Coalition for Networked Information so I wasn't sure what to expect, but what I found was an exciting mix of formal conference, semi-formal working groups and opportunities to make informal contacts. This energetic organization had already met five times since its establishment in May 1990 and is growing by leaps and bounds. This meeting, devoted to the theme of the Transformational Potential of Networked Information drew the most participants to date, but it seems clear that future meetings will simply get larger as the number of organizations associated with CNI grows and they send more and more representatives.

The opening session of the conference on the afternoon of November 19, was intended as a panel but in fact consisted of separate presentations by Greg Crane, Jeremy Rees, Susan Hockey and Robert Kargon. Crane emphasized how the Perseus Project which he has headed at Harvard for the past few years demonstrated that distributed, digital, cultural databases can make scholarship accessible to people who could not have had access to it previously, thereby democratizing scholarly activity. Tools such as Perseus, he felt, can also both make scholarship more interesting and make it easier to do things which were once extremely difficult. As one example of all three transformations, he showed how the use of the morphological tool in Perseus could make Greek texts accessible to undergraduates who do not read Greek. Other examples included combining maps, building plans, photographs of objects and texts in order to better understand the uses made of an archaeological site. Both types of examples changed the relative value of certain aspects of study and preparation and begin to emphasize the value of different skills. As such they suggest the degree and types of changes in academia which we will experience in the near future.

Jeremy Rees emphasized that while museum networking is in its infancy, museums have experience with texts as secondary sources of information while images are primary and that organizations such as the International Visual Arts Centre at Ipswich, which he heads, are giving over more of their space to interactive multimedia in order to allow visitors a range of art they would otherwise not be able to experience. He emphasized how these opportunities were being restricted by social and economic arrangements, such as copyright, which had not yet been adjusted to the new age.

Susan Hockey of the Center for Electronic Texts in the Humanities (CEHT) pointed to the potential of electronic texts to change what we know as scholarship by making available access to concepts based on lemmatization, semantic analysis and automatic thesaural based searching and allowing us to analyze for the first time what scholars actually do. Throughout she emphasized the importance of standard knowledge representation, using SGML.

Bob Kargon, who was invited as a scholar to reflect on the transformation in his own research on history of science brought about by electronic access to primary materials saw networks as principally a tool for better collaboration and multimedia computing as a means of representing realities, such as motion, which are difficult to express in writing. He vigorously urged attendees to make raw scholarly resources available for use rather than bottling them up in endless scholarly publication projects, citing the Oppenheimer papers project on which he is working as an example of the new genre of scholarly editing.

Following the panel, the conferees had an opportunity to attend three sessions devoted to providing more detailed briefings on these four and numerous other projects. I attended three briefings which attracted me and in one discovered an entire realm of knowledge representation issues I was previously only barely aware of.

In the first of these sessions, Susan Hockey picked up where she had left off in the general session by exploring some research issues of interest to the CEHT including the possibility of modeling a novel and then introduced the work of the Text Encoding Initiative and its working groups on spoken text, historical studies, dictionaries, natural language lexicons, terminologies and linguistic analysis. She noted that the second draft of the TEI Guidelines is on the network for comment. The project as a whole continues to expand (it now includes Japanese participants and texts) but its focus continues to be on recommending what to encode and how to encode it.

The second session opened a universe for me. Andy Adamson of the Department of Drama and Theatre Arts of the University of Birmingham (UK) presented the Calaban Project, a project in computer-aided-movement notation for documentation of dance. Adamson, a choreographer, dancer and educator, uses Labanotation (one of the two major 20th century methods of representing body movements) to record the otherwise ephemeral forms of dance. He explained that such an abstract representation is much better than any video document because the lens sees movement from one perspective only and must therefore always be an interpretation of the dance rather than an objective documentation of it.

Labanotation, which is written on a vertical stave from bottom to top, indicates the direction of movement of different parts of the body and the beat of the movement using a system of abstract symbols. There are about 400 symbols in standard usage and users need to be able to create or edit user defined symbols. One of the major limitations in the use of Labanotation has been the extremely demanding effort of transcribing. The Calaban Project was launched to support building a library of scores with high quality of output from rapid notation on a platform independent software with interfaces to other tools. The project uses AutoCAD and a digital tablet interface both to create the original library of symbols and to transcribe or author scores. Gordon and Breach are publishing CALABAN produced scores already and other methods of dissemination are being investigated. What was so exciting about Adamson's presentation is the potential it holds for transforming the way we talk about, study, and disseminate dance. It creates the possibility of a new language for scholarly communication, with a grammar and an existing literature. It liberates dancers who become literate in Labanotation to dance a dance score much as musicians play a musical score.

My third choice of briefing sessions was less fortunate. I went to hear about "Interactive Publication and Human Inquiry" and heard Stevan Harnad the editor of an electronic journal "Psycoloquy" argue that the appropriate form of publication for everyone is short dialogue-like critical responses such as are carried by his journal and to dismiss any interests in copyright or charging for publication available over the network on ideological grounds. Harnard took questions from the floor for which he literally had prepared answers; barely listening to the subtleties of what he was asked.

After a luxurious reception and dinner, the audience heard (or watched) Donna Cox of the National Center for Supercomputer Applications, demonstrate how her students were learning to use the complex capabilities of supercomputers. Unfortunately the results she showed illustrated how ten's of millions of dollars of supercomputer capabilities could generate graphics for cartoon-like public service announcements that could have been made easier and less expensively by drawing them. With luck, no skeptical member of Congress was present.

On the second day of the meeting, the plenary session heard Alan Salisbury of MCC (the Microelectronics and Computer Technology Corporation) and Geo Wiedehold, a program manager for DARPA, address architectures for high performance networked information. MCC was established as a consortium of North American microelectronics firms to enhance competitiveness in making high value electronic products such as flat displays, develop distributed intelligent information systems and put into place the systems required for enterprise integration. Salisbury argued that the commercial environment of today requires agile enterprises with virtual rather than actual vertical integration. In order to support this kind of firm, MCC is developing EINET (Enterprise Integration Net) with network services ranging from phone, fax, e-mail and EDI to newer telecommunications options) and has launched the "First Cities" project to provide a national testbed for multi-media products and services and to create a market for them whether these services are delivered over optic fibre, cable, or wireless networks.

Geo Wiedehold, director of DARPA's Intelligent Integration of Information project, articulated the challenge as being to get useful information to users, in a usable form, within any application, and in time. In order to achieve this the network needs to "know" the knowledge domain of the user and have an architectural level in which data with differing ontologies, and at different levels of abstraction, can be translated. Wiedehold postulated the existence of "mediators" which would be data objects with specialized intelligence running in this layer of the architecture and supporting the user requirement. He explored the work being done at DARPA in this Super-API layer and the problem of finding an appropriate set of "radicals" for representing the incoming knowledge on which the mediators could then act.

Following this early morning session, the conference work continued in a series of small group discussions on such issues as: modernization of publishing; transformation of scholarly communication; architectures and standards; directories and resource information services; legislation, codes, policies, and practices; access to public information; teaching and learning; and management, professional, and user education. I attended the session on Architectures and Networks chaired by Cliff Lynch, where I made a brief presentation on the recently completed work of the Committee on Computer Interchange of Museum Information. Judy Moline followed with an update on multimedia standards. She noted that the Interactive Multimedia Association had recommended practices for video on a PC and are about to establish a guideline for audio on the PC. The National Institute of Standards is circulation a "Working Draft of the Technical Report on Multimedia and Hypermedia: Model Framework". And she gave a quick overview of the status of working groups in ISO/IEC JTC1 SC18, 21, 24, 29 and CCITT Group 4. Kurt Molholm discussed the relationship between enterprise integration and CALS, especially the evolution of the STEP (Standard for Exchange of Product). Howard Besser updated the group on the most recent meeting of SC29 on JBIG standards for bi-level compression/low bits and lossless eight bit compression as well as the more distant developments in MPEG and second generation JPEG. Karl Malamud presented a passionate plea for free distribution of standards over the Internet, arguing that it would promote adherence to standards and need not reduce income to standards bodies since value added copies could also be sold in hard form with certification.

The final session of the meeting was devoted to the politics of NREN. Rick Weingartner reported the views of stakeholders in NREN as reflected by their conclusions at a recent meeting in Monterey California. The breadth of views was surprising, but there was consensus that in the longterm NREN must be a user network, and that

there is therefore a public interest in how it develops and that NREN politics is at a critical stage despite the election of Gore because NREN must be funded. On the other hand, it is not a zero sum game and the larger the coalitions behind it the better.

Ken Kay, legal counsel to the Computer Systems Policy Project (13 CEO's of the leading computer firms) emphasized that NREN was not primarily a technical challenge but a political one. CSPP sees NREN as needing to provide services to the average American in order to gain Congressional support. They have argued for a broader more public view of the High Performance Computer and Communications Initiative which they will present to the new administration in January. Believing that benefits and applications are critical, they urge a campaign around the average person who might be involved if NREN were to deliver health care, education and support for small business. Kay also urged a building a broad based constituency involved in policies about interoperability, intellectual property and application services.

Jane Bortnik of the Congressional Research Service advised participants that while there was great interest in NREN on the hill, it was a very new Congress with 110 new members who needed a great deal of background. She concurred with the other speakers that NREN would need to reach a very broad community to achieve legislative consensus on its value and suggested that a private sector advisory committee would be critical in the final passage.

The conference was adjourned by Paul Peters, CNI executive director, who urged attendees to contribute to a bulletin board called CNI.bigideas all their "big ideas" which might make a difference to NREN, or even to the quality of human life and the history of civilization.

VATICAN ARCHIVES CONFERENCE

The Bentley Historical Library Vatican Archives Project was the focus of a conference funded by the Wethersfield Institute at the Pierpont Morgan Library in New York City November 6-7. The two day invitational meeting brought about 15 archivists together with an equal number of scholars whose diverse research interests have led them to make use of the archives of the Vatican in Rome. The purpose of the meeting was to review and assess the collection documentation work completed by the staff of the Bentley Library and Vatican archives to date and to explore how best to carry the effort forward. The work to date has been funded by grants from the Getty Grant Program, the NEH, and the American Friends of the Vatican Library. The second phase of the work will be assisted by the Andrew W. Mellon Foundation.

The conference was opened by Fran Blouin, project director and Director of the Bentley Library who explained that his institution, a Michigan historical collection without significant Catholic holdings to say nothing of Vatican holdings, became involved as a result of his personal discovery of the need for an integrated and comprehensive guide to the Vatican archives during an unplanned visit in 1984. He explained that the project involved creating agency histories and doing a shelf based inventory of about 10 linear miles of records. After examining materials on the shelves, the staff looked for indexes, finding tools and published sources. To date, it has resulted in creation of about 2000 records, including 1070 individual series of which over 300 have never been listed before, and in the intellectual re-unification of series now held in the Archivio Stato de Roma and the Archive de Propaganda Fide.

The work to be completed under this phase of the project includes developing scope and content notes which discuss possible records and have more subject analysis, reconciling materials held in the Vatican library which have become separated from those in the Archives and visa-versa, extending the inventory activity to the archives of Propaganda Fide, and analyzing the findings aids to which the database points.

The next presenter, Len Coombs, demonstrated the database as it appears on RLIN. Beginning with a search for agencies, he demonstrated how the researcher would find series and locate indexes to them. The demonstration produced a universal gasp of amazed excitement from the end users who focussed their attention on the content of the archival materials being described and an almost equally universal groan from the archivists who focussed on the user interface, the inaccessibility of important access points, and the unstructured richness of the agency history records.

Beth Yakel continued the presentation on the achievements of the project to date by noting that this database differs from all previous guides by its comprehensiveness and by the way in which series description is always linked to agency provenance. This linkage itself presents some problems now because the project wants to provide users with access by subject and other indexes and have been unable to provide the kinds of links between records they wished within the existing software. The current indexing includes about 4600 agency names and variants, 2000 place names, 1000 topical subjects, and 1000 personal names.

Some of the difficulty of describing the archives of the Vatican results from trying to apply modern archival methods to an organization which is more than a thousand years old, with agency names and functions which have changed many times and which deals in multiple languages. Claudia Carlen presented the participants with a brief review of the history of the Vatican as a civil as well as a religious government. She gave colorful examples of how the administrative function was carried out in a pre-bureaucratic era in which powers were frequently associated with office holders and their families as well as with offices and how this further complicates the administrative history. Finally, she noted that there have been many types of administrative entities, such as synods, tribunals, congregations and the like, over time but the

meaning of these kinds of entities has not been stable. On the other hand, in at least one respect the changes are easy to document because all changes in competencies have been recorded in Papal bulls or constitutions in the Dataria much as changes in missions and organizations of the U.S. government are recorded in the Federal Register or law.

Len Coombs then described how the project had decided to structure the database and the policy decisions which went into project planning. These were:

1) that the product would be a database rather than a book to facilitate continual updating

2) that the project would use MARC AMC format but not make structured links between agencies and their predecessors or successors. Pointers could be provided to related records wherever they were found.

3) that the database itself is not a complete system of access but it is somewhat more than an index pointing to finding aids because in the Vatican archives context the findings aids often are not available or additional reference advise is required to make use of them.

The second day was led off by Katherine Gill of Yale University Divinity School who conducted the scholarly aspects of the project on site in Rome. She noted that most of her two years of notes had not been entered in RLIN because they didn't fit into the structure of the AMC record and that the question of what information to enter in a stage two record and how to represent that data had not yet been answered. She envisioned the result in the form of a multiple volume print publication.

Gill asked several questions which she requested that the conferees to consider. She noted that the fundamental intellectual issue was how to represent the knowledge of Vatican diplomatics which she had gained and which is critical to understanding the forms of Vatican records and with it their contexts and contents. Unfortunately, the project has not developed or used a controlled form-of-material terminology which does justice to diplomatic concepts. Another serious and related concern is how to overcome the barrier of knowledge of Papal bureaucracy presented by the agency history driven modern archival view. A similar issue is how to link people, including categories of people, with types of transactions they would have had with the Papal States or the Holy See. Finally, she noted that the functions of many agencies are still in historical dispute, raising the questions which always arise in the construction of scholarly knowledge bases of attribution and multiple, contradictory, sources of authority.

Finally, Gill asked the scholars in the room to consider their priorities for the project over the next few years. She noted that the impact of the Catholic Church on the whole world came as no surprise but the value of these archives to understand all aspects of Western history prior to the modern age and of world history since the 16th century was astonishing. The archives remain largely untapped except for internal history of ecclesiastical bureaucracy. While work remains for this kind of traditional history, the gigantic opportunities are for research on peoples and groups outside of Rome. The Rota, or court records, for example have vast amounts of primary data on the social and economic history of the world and much personal testimony about events great and small.

In the discussion which followed the scholars indicated that while provenance is critical to their understanding of the meaning of records, it is not adequate as the only search strategy. They also made it clear that attribution of facts will be critical as there are wide areas of dispute. In general they displayed a tendency to confuse the difficulty of recording low level and high level aggregation of information in the database and presumed that it would be easier and better to record less, analyze more, and be definitive (even though they would each want only themselves or their students to be in charge of the relevant interpretation). Given the choice of anyone else analyzing the data, they wanted the next few years of the project to focus purely on getting more information at lower levels of detail.

Archivists questioned whether the scholars wanted a database that went beyond bibliographic citations and if so whether it might extend to incorporating knowledge of prior researchers and their uses of records, if it should resemble a research data environment like the Medieval and Modern Databank more than a bibliographic file and what tools might be associated with retrieval of agency records versus descriptions of documentation. Archivists also suggested that the project team consider the scholarly software environments through which access might occur, how best to maintain the database, and the effect of the existence of the database on Vatican archives staff.

Did the conference achieve it aims? In planning the second phase of the project the staff was right to try to establish first what scholars wanted or needed and then design a data structure and system functions to support those requirements, but this conference did not provide a framework for discussion which could have led to conclusions about scholarly requirements. The schedule was designed to spend half the meeting describing what had already been done (some of which could have been provided as background briefing materials) and the second day had no time scheduled for the kind of focussed or facilitated working sessions that are required to address concrete issues of data representation and systems functionality. I came away with a clear sense of what the project might do in the next phase in terms of data representation strategies and tactics for dissemination of the information for scholarly use, and the staff may have also, but the conference didn't produce a consensus on these or any other matters. Its too bad, since the meeting could have forged links between bibliographic databases and scholarly reference files by defining a data model to be expressed in SGML which incorporates the rich information collected by Katherine Gill, links it to the bibliographic database, and presents it to end users in a hypertext, and/or in an information retrieval facility in which natural language queries are interpreted through a thesaurus of forms and functions to retrieve data about both the contexts and structures of records of the Vatican.

NETWORK ADVISORY COMMITTEE TACKLES MULTIMEDIA

The Library of Congress Network Advisory Committee (NAC) meeting, December 7-9, 1992, addressed the topic of the networking implications of multimedia computing. The first morning session was designed to establish a shared sense of the social and technical issues. It was followed by a session at the Library of Congress National Demonstration Laboratory in which speakers discussed applications of multimedia computing in the medical, museum, humanities, and K-12 education communities. The second day was devoted to discussing appropriate actions for NAC.

The first speaker, Bob Heterick, President Elect of EDUCOM, spoke to the title "Paradigm and Paradox" about the paradoxical exponential growth of information and its declining cost and the paradigm shift it will require for us to move from mass production and mass markets to individuated products and niche markets. He predicted that within two years we will all be using multimedia PC's, bringing about a tremendous increase in demand for network bandwidth (noting the 12% p.mo. increase in Internet traffic we are experiencing now as evidence, even though it seems to be taking place without multimedia networking contributing much).

Howard Besser followed with an introduction to the technology issues in multimedia networking, stressing that until now most multimedia has been closed box systems. He noted that the reasons for this are related both to the problems of transmitting single multimedia objects and the problems relating to the vast size of multimedia databases (500,000 slides in slide libraries, millions of specimen's in natural history museums, ten's of thousands of hours of video in video libraries). Turning just to the problems associated with transmission of individual items, Besser noted that these problems begin at the very moment of conceiving the idea of communicating to another system because of lack of standards for aspect ratio's of screens, numbers of buttons on mice, the behaviors of color phosphors, etc. and because most existing systems need to develop for different kinds of interfaces to even accommodate multimedia objects. If these problems could be overcome, the tremendous storage requirements, file sizes for transmission, and for display. To illustrate the issues, Besser noted that 1,000 24bit color still images required 1GB of storage, that transmitting such an image over a T1 line requires 3.2 seconds after at least a one second search on a disc and three or more seconds of juke box disc shuffling and that painting a screen with one of these images takes up to 10 seconds. Under ideal conditions, without multiple contending users and the dedicated use of the fastest lines we currently use for communication outside of an individual institution, it is difficult to respond to a request for a single high resolution image in under 15 seconds.

Having established that all the problems we are struggling with relate back to file sizes, Besser turned to work underway in compression and noted that we have no empirical basis for deciding what kinds of compression losses are acceptable to users and pointed out that JPEG compression, based on subjective redundancy, won't work for some types of uses.

At the National Demonstration Laboratory in the afternoon, Bill Harness of Time Associates (the corporate name derives from a project entitled "Technological Innovations in Medical Education") presented several videodisc programs developed by his firm. The systems use a voice interface to enable the "doctor" to interview a patient and order medical procedures. The videodisc contains sequences in which the patient answers a wide array of possible questions and video sequences of many potential outcomes. A probability algorithm operates based on the condition of the patient and the type and rate of intervention ordered by the "doctor" to determine outcomes. The system is used both to teach students and as a test for medical students or residents, and while it had considerable appeal, it is noteworthy that the uses cited by Harness were all closed box rather than network implementations.

I spoke next on museum applications, stressing that while museums are ahead of libraries and other information centers in employing multimedia documentation systems (because museums are inherently multimedia and sensitive to esthetic concerns), they are behind in networking. The reasons for the lag in networking are both the complexity of museum data which has inhibited standards for data sharing, and the requirements for multimedia. Here museums have met not only the technical limitations described by Besser but also the societal limitations of an inadequate copyright law framework, absence of a consumer market, and lack of access to network services. I briefly described the Art Loss Registry and Interpol imaging projects and noted the commercial applications for art auction data and images as emerging examples of multimedia networking. In addition I reviewed Art-Com on the Well, the use of Compuserve by the Smithsonian Office of Photographic Services, American Memory and similar CD publication efforts, and the trial use of GTE Image Span services for a computer based conservation dialog between the National Gallery in DC, the V&A museum in London and the Louvre in Paris. Next I discussed planned undertakings in Europe and the U.S., both commercial and governmental and the potential impact of the Standards Framework for Computer Interchange of Museum Information (to be published by MCN in March) on such efforts in the future. My major concern was to introduce the wealth of good multimedia computing activity in museums as illustrated by the ICHIM '91 and ICHIM '93 programs while at the same time suggesting that networked implementations were likely to be very modest for a considerable time.

The next speaker, Carl Fleischhauer of the Library of Congress described and demonstrated the American Memory project at the Library. The project is intended to demonstrate how a library might make its multimedia resources available for research. The products demonstrated, a CD containing bibliographic data, image

facsimiles and captions from an image collection and a CD with sound recordings from American social history were both well conceived an interesting publications, but as Fleischhauer noted, the Library will have problems providing network access and even distributing these databases due to copyright.

The final speaker of the day, John Clement, discussed the activities of the Consortium for School Networking which has experimented with such projects as the National Geographic Society's Kids Network, a "Hands on Universe" link between high school students and an optical telescope which returns digital data about where it is pointed, and "Muse's" of Multi-User Simulation Environments which are game like Internet resources. Clement emphasized interactivity but not multimedia - presumably because actual multimedia networking is rare and the latest buzzwords in education are 'self-paced', 'exploratory', and 'interactive' learning experiences.

On the second day a panel of library systems and network providers discussed the implications of multimedia for library networks. Ron Miller of the Washington Library Network led of with some extremely useful observations. WLN is focussing on database construction not technology development, and in these areas cataloging (and indexing) are not only not going away but are becoming more important with the advent of multimedia. Miller noted that domains with a finite corpus of research material such as classics and site archaeology are currently receiving great attention because their corpus is well known and well indexed but if the information we have is to be used well by its potential users, access will be critical. WLN is resolving the high resolution/low resolution dilemma much as others have by capturing at the highest resolution possible and delivering at whatever resolutions are commercially, technically and culturally acceptable. Copyright is a major barrier and WLN is seeking to collaborate with such content holders as museums which have (or think they have) rights in order to deliver products.

Don Muccino of OCLC asserted that intellectual property rights and technology issues were both of equal importance to OCLC. In the intellectual property area the issues are essentially at what level of specificity to deal with recombinant multimedia data objects. Technologically OCLC is looking to NAC to take a role in achieving multimedia ready networking capabilities for the library community.

Respondent Paul Peters (CNI) noted that it was the first anniversary of the High Performance Computing Act of 1991 and that the technical barriers remained that multimedia computing was simply beyond the throughput range of WAN's. He suggested that two fundamentally new elements in the future situation demanded the attention of the library community. First, he suggested that in an interactive environment, users will be producing knowledge, not just receiving it, and in a fully networked environment, the monopolies of the distributors of knowledge will rapidly disintegrate: this means new roles for publishers and libraries. Second, the suggested that the paradigm of users seeking information would be replaced in object oriented network environments of the future with that of information seeking out users and that it behooved us to figure out how such user profiles and information descriptors would connect.

Peters was seconded by Stephen Wolff of the National Science Foundation who predicted that when NREN had a GB network that it would be used for multimedia because it could be used for multimedia. In this setting, we would need standard toolsets for representing multimedia and linking it meaningfully, something I envisioned as a sort of superset of SGML codes making up a macro language of information.

In the open discussion by NAC members of what NAC should do which followed, the group alternately focussed on how to have a long-term impact through restructuring library school education and short term actions focussed on the Clinton Administration and even on the transition team. Two sub-committees were given assignments relating to the two foci. Those of us who were observers, obviously did not participate, but I for one found myself wondering if NAC will continue to have the kind of influence it has had now that Henriette Avram, its guiding force for so many years, has moved into a somewhat quieter role as emeritus and left her influential post within the Library of Congress.

Proceedings of the meeting will be published by the Library of Congress Network Advisory Committee within a few months. For further information, contact William Stark, Collections Services, LM642, Library of Congress, Washington DC 20540.

ELECTRONIC DEMOCRACY: CULTURES, VALUES & NORMS

The Second Annual Electronic Democracy conference in Ottawa December 1-2, 1992 featured a tour-de-force of excellent speakers in an atmosphere of stimulating debate and good companionship. Unfortunately, either because of the recession or a fall off in interest, it attracted only 200 rather than the nearly 400 participants expected.

The conference was led off and given a central theme by David Osborne, the author of Reinventing Government a report on the practices which Osborne found in entrepreneurial state and local governments in four years of research. Osborne argued that customers must become the raison d'etre of organizations and if government is to really work, they will need to transform their reward systems. The outmoded way of governing is to establish top down bureaucracies delivering standardized services in a monopoly. Osborne gave examples, such as the postal service, to illustrate that this model is no longer satisfactory and suggested that public customers have higher service expectations now due to their private sector experiences and that government organizations will have to adopt new principles to survive.

He identified the shift from centralized to decentralized authority as one such principle that would result in government reacting faster, and would encourage participatory and total quality management, and reliance on ad hoc teams. Monopoly, he suggested, needed to give way to competition in service delivery. Citing trash collection services in Phoenix, Osborne illustrated how efficiency could be dramatically improved while a government agency remained in the service delivery business when it was forced to compete with the private sector to retain the contract.

By moving from budgeting and funding inputs to funding outputs or results, Sunnyvale California has been able to increase governmental efficiency by 4% a year for a decade. Osborne suggested how performance measures relevant to customers could be used as standards for public funding. Overall, he suggested, government would need to move from being rule and budget driven to mission driven.

Osborne preached a message of catalytic government, not so much of less or of more, but of shifting the focus from "rowing to steering" and of emphasis on "governance" over emphasis on "government". One way to achieve the downsizing being requested by citizens and to make government more responsive, he suggested, was to structure a "customer driven government" by issuing vouchers for services wherever appropriate in place of delivering the services through government agencies. He contrasted the tremendous success of the G.I.Bill of Rights in educating WWII veterans through vouchers with the more dismal record of the Veterans Administration Hospitals as an example. The larger principle involved here is to use market mechanisms to further governance. The FHA creation of a secondary market for 30 year mortgages he suggested went further than a government housing program could have in assuring Americans better housing and the sale of pollution rights in the open market seemed equally likely to better improve the environment than punitive regulation.

The themes of Osborne's talk resonated throughout the conference as other speakers tried to identify the ways in which electronic democracy contributed to decentralization, to measurement of services, to sensitivity to customer needs and to shifting towards catalytic governance.

In parallel sessions following Osborne's plenary, one panel addressed standards while a second explored Freedom of Information. Despite the tremendous credentials of the standards group chaired by John McDonald with Ed Acheson (Treasury Bd. Secretariat), Cynthia Durance (National Archives of Canada), and Paul Peters (Coalition for Networked Information) I chose to attend the FOI session about which I know less. There Tom Mitchinson (Assistant Privacy Commissioner, Ontario) gave a broad overview of the increased potential for data collection and the growing threat of intrusive uses of information as well as the potential of the new technology to provide new means of access to information for citizens and asked many questions which he didn't try to answer.

Peter Gillis (Director of Information Management Practices, Treasury Board), by contrast, provided a plethora of astonishingly controversial opinions which, for some reason, no one challenged. He first noted that technology change is still adding to the complexity and cost of access to information rather than simplifying it. He suggested, in comments which were strictly personal and not government policy, that it might be time to abandon the legal right to access as a separate law and replace it with specific acts defining how government will provide specific information to the public. He further suggested that the separate regulatory situation of telephone, cable, broadcast etc. was not appropriate to the electronic information age. In addition he suggested that enhanced service delivery requires that deliverers have a great deal of knowledge about their customers and that our concepts of privacy protection might need to give way.

In my keynote address on "Public Accountability and the Virtual Document" I argued that citizens had not given up their basic rights to accountability simply because we've changed the way we communicate information but that unless organizations began to take seriously the difference between evidence and information the result of the virtual electronic document would be just such a loss of rights. I introduced the distinction between evidence and the traditional concepts of data, information and knowledge by emphasizing that evidence was linked to an act and that the content of documents was not evidence unless it retained its structure and context. To illustrate the concepts of structure and context, I used the example of the electronic mail message "well done" which means very little unless we know that it was found in the mailbox of Admiral Poindexter and was linked as a response to a previous message regarding Oliver North's misleading testimony to the U.S. Congress. Structure and context are required for the message to be evidence. I explored why testimony from a live database through a Lotus spreadsheet and a graphics package cannot be documented on paper and why California accepted liability for false arrest rather than try to prove the validity of data in a linked database of many law enforcement agencies. My choice of cases also illustrated how the content, structure and context of electronic records are themselves changing as the society invents ways of dealing with the new method of communication. In the end I suggested that organizations could no longer rely on archivists to save the record for them and urged attendees to sensitize their own staff's to the issues raised by electronic evidence, introduced risk management accompanied by personal accountability for evidence, and fostered experimentation and research in how to respond responsibly to the problem of preserving legitimacy in an age of virtual documents.

The subsequent panel on electronic delivery of government services returned to some of the themes raised by David Osborne. Marcel Nouvet, Coordinator of the "Single-Window Initiative" recently renamed the "Info-

Center Initiative" involving 13 Canadian government departments in a plan to provide one stop shopping for government services at store-fronts throughout Canada, discussed how the project was designed to reduce agency costs while responding to customer desires and how it would be augmented by 24 hr. a day kiosk services. Shirley Marshall, Public Access Project Manager for IBM Corporation, described several kiosk projects underway in the United States in which her company is involved in a partnership with Public Technology Inc. She presented an enthusiasts view of the future of multimedia kiosks in public spaces and enumerated services ranging from job placement to drivers licence renewal,birth certificate copies, registration for parks and recreation programs and traffic ticket payments being provided through kiosks throughout the U.S.

In the final session of the day, three speakers addressed the issues of private provision of government information. Gail Dykstra of the recently dissolved Canadian Legal Information Center, described the work of a Task Force on Government Databases which identified the lack of a clear dissemination policy and the insistence of the Government on Crown Copyright as issues that needed to be resolved before legal information would be more broadly available at lower cost. A major conclusion from two years of hearings was that the government was confused about its mandate with respect to making knowledge of the law available and that progress would be impeded until the mandate was clarified.

Ernie Boyko, Director of Census and Demographic Statistics at Statistics Canada, pointed out that the private sector has always taken government data, added value, and republished it. The issue now was whether Stats Canada should likewise add tools and value to the data, and if so how it should be priced and what information literacy education Statistics Canada should provide to assure that the next generation of Canadians know better what to do with numbers.

The second day of the conference was opened by general remarks on cultures, values and norms from Dan Gagnier, President of the Brewers Association of Canada. David Goldberg followed with a plenary address on the European Market for information in 1993 and its impact on North America. To me what was most interesting about Goldberg's comprehensive and well researched talk was that it focused entirely on database producers and the sale of data (both at roughly 50% of the North American market) rather than on networks, home markets, or the creation of new media opportunities. What is especially lacking in EEC policy, which includes some central efforts to research new database products, is the recognition that the PTT's represent a major barrier to access to major innovations that will sweep through the information services market in the 1990's.

In the only disappointing session of the meeting, representatives of two Canadian bureaucracies with longstanding but routine electronic communications systems (Douglas Simpson, Royal Canadian Mounted Police, and Lynn Ogilvie Revenue Canada, Customs & Excise) joined a panel with Michael Slaunwhite of the software firm Corel Systems to examine the impact of electronic networking on organizational behavior. Because the government organizations were so strongly hierarchical and their communications traffic was enforced to be routine transactions, the impact on them was very little like what has been seen in other organizations and because Corel is a typical fast paced software firm with virtually no structure, the impact on it was likewise imperceptible. What seemed like a great idea for a session just selected three insular and quite atypical organizations, none of which is connected to the Internet in a meaningful way.

Fortunately, the keynote following lunch by Costis Toregas, President of Public Technology Inc., reinvigorated the proceedings. Toregas challenged the assembly to consider what electronic democracy could mean if we began with a strong ethical commitment to helping the underdog and building local communities. His belief in the ability of people, armed with appropriate technologies and a commitment to equity to change the future for the better through partnership between public and private enterprise was exciting and illustrated by examples in which PTI has led. In closing he further challenged the participants to make the electronic democracy debate a permanent conference by re-inventing it on the Internet.

In a session on Electronic Communities, Micheline Ouellette-Rogers described the Canadian Federal Government information service "Senior Executive Network" which hopes to connect 4200 senior civil servants and provide them with news, databases, statistics, background papers and, ultimately, a bulletin board for interactive communications. This top down effort with its lengthy time line was neatly contrasted with the Ottawa FreeNet project described by Carlton University professors Jay Weston and George Frajkor or the Internet, described by David Sutherland. Both the FreeNet and Internet depend heavily on unplanned contributions by hundreds of individuals and support free flowing dialog. Not surprisingly both are growing at unbelievable rates without the central planning and staffing of the Senior Executive Network.

The final session of the meeting, organized by Garth Graham, examined his fascinating premise that people are inventing their public persona in the electronic society and that pollsters, market analysis and developers of GIS systems are the analysts to whom we must turn for understanding of our electronic personalities as "do-it-yourself", smartcard, individuated product, economy replaces the service economy.

The first panelist, David Zussman, a private pollster, noted that more polls are being taken for more clients than ever and that they can be highly reliable when done correctly. They are becoming essential not just to politicians, but to the public policy formulation process as advocates of various positions introduce polling data as evidence about how a community feels on any issue. He

noted however that rising rates of refusals to be interviewed are beginning to threaten polling as the public reacts to invasions of privacy and increased polling activity.

Marie Low, V.P.for Business Development at Polk Inc., a major market research firm, discussed the methods used by her firm to identify niche markets for clients whose products are increasingly aimed at special markets and whose needs to reduce and target advertising are coupled with desire to cultivate lifetime customers rather than one time buyers. She described the ways in which mailing lists, door to door canvass data, and client databases are linked to provide value added information products, and while she stressed how carefully her firm adheres to the law and ethical guidelines on privacy, it was clear that the net effect is to identify specific people and their habits.

Lazslo Sugar, the Manager of Geographic Information Systems for Metropolitan onto closed the conference on a mixed note as he described the ways in which similar data, fed into GIS facilities, can correlate data in new and powerful ways. While the public fears almost any correlation of data, the GIS correlates data much better than traditional means creating both the potential for much greater intrusion into private lives and the possibility of much better government information to solve the interconnected problems of our age. As such the GIS is an appropriate symbol of the hopes and threats of an electronic democracy.

MUSEUM COMPUTER NETWORK

The annual meeting of the Museum Computer Network, held in conjunction with the American Society for Information Science conference in Pittsburgh, was its largest ever. Many will remember it for the afternoon we shared the second floor of the Hilton with Bill Clinton and the entire press corps which was madly pursuing him, or for his promise that "You will love what my administration will do for museums" but I will remember it for the day of special sessions arranged jointly with ASIS.

The first day of the MCN meeting was, as usual, devoted to pre-conference workshops which unfortunately prevented those like myself who would have liked to attend ASIS but had teaching commitments from sessions including talks by Herbert Simon and Edward Tufte!

The joint sessions began with Cultural Information Policy in the European Community at which James Hemsley of Brameur Information Technology and Andrew Roberts, chairman of the ICOM CIDOC committee (whose paper was read by John Perkins), presented an overview of EEC and European national activities with respect to museum information. The second session, New Data Models for Historical Information, featured Joseph Busch of the Getty Art History Information Program, Charles Patch of the Historic New Orleans Collection, and Andrew Roberts whose paper on this occasion was delivered by me.

In the final joint session of the day, Digitization of Art Images: Current Status, Clifford Lynch of the University of California led off with a pithy summary of the state of the art. The technology to digitize images exists off the shelf, he noted, but image digitization is still a craft and cannot be done in production mode yet. The retrieval and indexing issues associated with image bases are highly complex and far from solved. Even the definition of the issues regarding imagebases in networked environments are unclear. In the society realm, copyright might be protected by embedded pointers but there will always be a loss of control over display in the networked environment.

Howard Besser presented a step by step reconstruction of how historical data is presented visually in a 3-D model of the City of Montreal in the work that he has been doing for an exhibit at the Centre for Canadian Architecture. He began with the primary manuscript and archival records from which researchers culled information about the inhabitants of Montreal in the 17th century and their commercial activity. This data was encoded in a database which was then linked to Geographic information system software and displayed so that visitors to the museum could display the city and the social characteristics of inhabitants in two dimensions or "walk through" the streets of old Montreal to see the data which had been collected on actual building heights and shapes displayed visually on their screens.

Lois Lunin reviewed some of the problems in image data bases including challenges of data management, requirements for new query languages and indexing techniques, and the problems of filing and access as well as the copyright and rights clearance cost issues. She concluded with hopes that Picture Network International, a rights collective, might alleviate some of these latter problems.

Joseph Busch presented a model of the interaction of factors such as the type of collection, the number of images, information management practices, material value of the collection, number of users and budgets that effect the character of resulting products in collections planning image databases. Although the model was not backed by empirical analysis, it had a verisimilitude that was compelling. I look forward to its amplification and factual proof.

Finally, Deirdre Stam reviewed the existing research literature on digital imaging and found numerous opportunities for graduate students to pursue useful projects to learn more about concrete aspects of information retrieval, systems design and dissemination of existing image databases.

Other sessions held on Thursday were devoted to "Finding Funds", "Forming a User's Group" and MIS Management. The exhibit hall was open to both MCN and ASIS participants and proved a great draw although few new products were demonstrated.

On Friday morning, MCN special interest groups met around MIS, Visual information, Small Museums,

Repatriation, Art Museums and Computer Interchange of Museum Information. Sessions devoted to requirements for curatorial systems, automating museum administration and "delivering the image" preceded the conference luncheon and on archaeological databases, networks and desktop publishing, bar-coding, point-of-sale followed. In addition, James Pick presented the results of the 1991 survey of Art Museum Computing and the Pittsburgh Children's Museum demonstrated their PAX, international communications network for children. Obviously the activity was too great for anyone to attend a large proportion of the sessions, and I was engaged in constant MCN Board business anyway so I was unable to attend at all!

Saturday morning I did attend an excellent session of data conversion conducted by Doug Allen of AMARC with other presentations by Greg Tschann of the Art Institute of Chicago and Lenore Saransan of Willoughby Associates. Doug's presentation, built around a hypothetical museum project, discussed how to approach answering four fundamental questions during the project life from "What do we have now?" and "How could we convert it and at what cost?" to "How do we get it done" and "How well did it turn out". The paper presented substantial practical advice that will prove useful to anyone engaging in a data conversion project. Doug's points were illustrated by Greg from his experience and reiterated by Lenore based on the experience her company has in keying museum data.

The conference closing plenary was devoted to a free form discussion of needs of museums for automation assistance and how members view MCN's potential role led by the Board of Directors who were facing the task of acting on MCN's long-term and short-term forward plan.

CALENDAR

January 28-February 3 San Francisco, CA;ARLIS/NA Conference"Moving Into the 21st Century" [Pamela Parry, ARLIS/NA 1993 Conference, 3900 E.Timrod St., Tucson, AZ 85711;(602)881-8479;fax 602-322-6778]

February 1-4 Washington, DC;ComNet'93 [ComNet'93, P.O. Box 9107, Framingham, MA 01701-9107;(800)225-4698;fax 508-872-8237]

February 3-5 Cambridge, MA;"Technological Strategies for Protecting Intellectual Property in the Networked Multimedia Environment" [Thomas Lee, DOHRS/CTPID, Massachusetts Institute of Technology, E40-218, Cambridge, MA 02139; 617-253-6828;fax 617-253-7326]

Februray 3-6 Seattle, WA;VRA 11th Annual Conference [Barbara Stevenson, VRA Sec., Carleton Univ., SSAC: Art History, DT2203. Ottawa Ont. K1S 5B6 CANADA]

February 22-26 San Antonio, TX;Techdoc Winter 93, "Migration Strategies" [GCA, 100 Daingerfield Rd., Alexandria, VA 22314; 703-519-8060; fax 703-548-2867]

February 23-26 Bethesda, MD;Government Imaging 4th Annual Conference [USPDI, Inc.,1734 Elton Rd., Ste. 200, Silver Spring, MD 20903-1724;(301)445-4405;fax 301-445-5722]

February 24-26 Orlando, FL;11th Annual Conference on Interactive Instruction Delivery [Learning Technology Institute, 50 Culpeper St., Warrenton, VA 22186;(800)457-6812]

Spring, 1993 San Francisco, Washington, DC, Austin, Chicago;Document Image Management Seminars [USPDI, Inc.,Image Management Seminars, 1734 Elton Rd., Ste. 200, Silver Spring, MD 20903-1724;(301)445-4400;fax 301-445-5722]

March 1-3 Washington, DC;8th Annual Computers in Libraries [MECKLER Conference Management, 11 Ferry Lane West, Westport, CT 06880;(800)635-5537;fax 800-858-3144]

March 22-24 Pittsburgh, PA;Online Publishing '93 [Graphic Communications Association, 100 Daingerfield Road, Alexandria, VA 22314-2888;(703)519-8160;fax 703-548-2867]

March 30-April 1 San Jose, CA;intermedia '93 [ACCU-Reg, Inc., 1420 MacArthur Dr., Suite 104, Carrollton, TX 75007;(203)352-8240;fax 214-245-8700]

April 2 Washington, DC;Museum Education Rountable,3rd Annual Research Colloquium [Annie V.F. Storr,c/o MER. PO Box 23664, Washington, DC 20026-3664;(202)357-2388;fax 202-786-2607]

May 4-6 New York, NY;National Online Meeting & IOLS'93 [National Online Meeting Learned Information, Inc., 143 Old Marlton Pike, Medford,NJ 08055;(609)654-6266;fax 609-654-4309]

May 6-8 Long Branch, NJ;MARAC Spring Conference [Frederic C. Pachman,Monmouth Medical Center, 300 Second Ave., Long Branch, NJ 07740;(908)870-5170;fax 908-222-3742]

May 9-12 St. Louis, MI;AMIA Spring Congress [AMIA, 4915 St. Elmo Ave., Ste. 302, Bethesda, MD 20814]

May 11-14 Edinburgh, Scotland; IASSIST/IFDO '93"Openness, Diversity and Standards: Sharing Data Resources" [Alison Bayley, Data Library, The University of Edinburgh, Main Library Bldg., George Square, Edinburgh EH8 9LJ, Scotland, UK]

May 16-20 Fort Worth, TX;AAM Annual Meeting"Partnerships: Museums and Communities"[AAM, P.O. Box 40, Washington, DC 20042-0040;(202)289-9113]

IN-BOX

REPORTS & PROCEEDINGS

RECOMDOC '92: Proceedings of the Eastern and Central European Regional Conference on Museum and Cultural Heritage Documentation, 4-6 May 1992 (no publication data but distributed by the Getty Art History Information Program, 401 Wilshire Blvd., Suite 1100, Santa Monica, CA 90401), 174 pp.

This conference brought many of the leaders of museum documentation from Western Europe and the United States to a regional meeting in Bucharest. The meeting was reported on by Nancy Bryan in Archives and Museum Informatics vol.6#3. The Proceedings validate her enthusiastic report. I was particularly excited by the reports from our Eastern European colleagues; obviously they were new to me, but on any terms I believe their extremely fresh insights will stand as valuable contributions to the field.

United Nations, Advisory Committee for Coordination of Information Systems, Strategic Issues for Electronic Records Management: Towards Open Systems Interconnection (NY, UN, 1992) 126p.

This report expands on section 3 of the ACCIS TP/REM report of 1989. The premise of this study is that OSI is being adopted by national governments to provide the advantages of inter-operability but is not being taken advantage of by U.N. agencies. Unfortunately, the rudimentary overview of OSI provided in Part I and the non-technical description of numerous OSI protocols in the directory-like Part II of this report do not address strategic issues as promised. In fact there is virtually no discussion of how strategic, tactical, practical or even sensible it is to adopt any given standard in this catalog of precis. One section, p.42-48, for example addresses all Message Handling Services including the x.400,x.401, x.402, x.407, x.408, x.411, x.413, x.419, x.420, x.430 protocols. Because it is an OSI standard, the volume promotes ODA (p.26-29) over SGML (p.30-31) even though there are no ODA conformant applications and ODA has distinct drawbacks which are not discussed. The report similarly recommends use of Document Filing and Retrieval (DFR) Applications, DFR Servers and DFR Users standards which haven't been implemented anywhere. Part IV acknowledges the impossibility of moving directly to OSI in many cases but it doesn't impede the ideological tone of the tract. I did find some useful portions of the document - a discussion of electronic records functional requirements on pp.6-11 and pp.91-99 both express in a useful fashion points made elsewhere by Charles Dollar.

Robert Ubell Associates, **Draft Preliminary Findings of the Rights for Electronic Access to Delivery of Information (READI) Project**, prepared for the Coalition for networked Information Sept. 29, 1992 typescript, 69pp. (available from CNI)

This is a report on three one day sessions held with potential buyers of information, sellers of information and a mixed group of buyers, sellers and intermediaries. Sellers are authors, publishers, database providers, professional societies, government agencies and universities that create data. The intermediaries were software vendors, royalty agencies, attorneys, information brokers and retrievers of data. Buyers included individuals, libraries, retail outlets and others who purchased information. Some organizations played more than one role. The sessions were conducted according to a set script which addressed a series of issues only some of which I choose to discuss here. For example, the participants were asked how to define a user, and all three sessions agreed that context of use defines users, not the kinds of organizations they are or any other criterion. Similarly all three sessions agreed that the parties to agreements were the buyers and sellers involved in a specific deal. Interesting areas of disagreement emerged as a consequence of the tactic of having separate groups: buyers wanted to incorporate a minimum set of standards for use into contracts while sellers wanted to focus on precise rights being transferred. Buyers liked the existing definition of fair use under the copyright law while sellers wanted to explicitly define what uses were allowed without making reference to the doctrine of fair use. Buyers and sellers were unable to agree on who was responsible for policing unauthorized use or on the benefits of rights holding/rights brokering agencies. Buyers wanted assurances that they would be able to access information on some fee basis after their license expired and wanted to conceal the identifies of individual users (reflecting library traditions).

Given the range of views expressed, Robert Ubell Associates recommends that the search for general formulations of a standard contract be abandoned, that a guidebook of issues be published to inform all sides of the questions involved, and that establishment of rights holding and rights brokering organizations be pursued.

Workshop on Electronic Texts, 9-10 June 1992: Proceedings, Edited by James Daly, (Washington DC, Library of Congress, 1992) 118 p. free from American Memory Project Office Library of Congress or by anonymous ftp at seq1.loc.gov where the file is called Etext.workshop

These very detailed minutes of the two day workshop on electronic texts held at the Library of Congress last summer provides a fascinating insight into the state of current progress towards an electronic cultural heritage. The conference included "show and tell" presentations from the Perseus Project, the Patrologica Latina Database, American Memory, the Papers of George Washington, the Online Journal of Clinical Trials and the Cornell University Mathematics books collection. In addition, sessions, devoted to:

"Who will use it and what will they do?"
"Distribution, Networks and Networking"
"Image Capture, Text Capture"
"Approaches to Preparing Electronic Texts", and
"Copyright Issues".

The participants constituted a virtual who's who in the area of electronic texts and the discussion is sophisticated and critical. The papers delivered at the meeting and the questions posed afterwards are all usefully summarized (some requiring as much as five single spaced pages to capture their nuance), and the breadth of the dialogue assures that most issues receive some treatment.

While strongly recommending the report, I do so with regret that issues of importance to archivists and museum documentation and education staffs are treated as subsets of preservation concerns. Such is the state of the art. No attention is devoted to the concept of archival evidence and virtually no mention is made of databases in which text per se is a secondary source of information although some of the "texts" under discussion such as architectural diagram libraries, mathematics textbooks and reports of clinical research fall into a category in which the prose is not the most critical information carrier.

Proceedings of the NREN Workshop, Monterey California September 16-18 1992, sponsored by Computing Research Association, EDUCOM, IEEE U.S. Activities Board (EDUCOM, 1992) 225pp.

This report consists of very brief summary of a meeting with NREN stakeholders held to define major issues arising from the High Performance Computing Act and required to be submitted to Congress by OSTP by December 1992. The body of the report consists of position papers filed by such stakeholders as the ALA, AAU, ACRL, ARL, CAUSE, CNI, EDUCOM, IEEE and other professional associations and by Advanced Network Services Inc., AT&T, Sprint, the Information Industry Association and other commercial interests. For those interested in shaping the public policy debate over NREN, the report is essential reading.

Subject Indexing for Archives, Report of the Subject Indexing Working Group, Planning Committee on Descriptive Standards, Bureau of Canadian Archivists; Publication #4 (Ottawa, BCA, 1992) 144p.

Although this is a committee product, it reads well and has some opinionated sections. Unfortunately I think its opinions are wrong. To begin with, the group accepts the existence of a false dichotomy between content indexing and provenance access which should have been put to rest by the work of Richard Lytle, but seems instead to have been reinforced by it. Lytle demonstrated that neither approach worked well because archivists didn't know how to do subject indexing. The subjects they could have indexed were those in the archival records or those of the archival provenance, but archival indexing practices and retrieval systems were so poor that retrieval under either regimen was unsatisfactory. He (and I) later went on to recommend subject indexing of provenance - the functions and activities which give rise to records - and to suggest data models and systems functionality that would support transparent translation of user queries into provenancial terms. This study assumes as too many archivists do that one can either subject index records or that subject indexing is not relevant. Actually subject indexing is critical, but it is also important what one indexes, and subject indexing mission statements, descriptions of activities generating records, and forms of material would be consistent with provenance based approaches. The criticism of provenance based retrieval here as requiring intermediaries and not involving subject indexing is just plain wrong on both counts.

Even though I think they are pushing the wrong approach, we could ask how are the recommendations about subject indexing practices? Here the verdict is mixed. The first four chapters are helpful. The emphasis on users is sound in the abstract and the focus on provenance as the central feature of archives is consistent with RAD (although it is in these two sections that the worst misinterpretations about provenance-based approaches occur). The discussions of content analysis and of abstracting and indexing are very useful.

The introduction to documentary languages in chapter 5 is more detailed than that provided to most archivists as part of their training but prejudiced towards "a controlled vocabulary of single-concept terms, a set of syntactic rules for pre-coordination...and a supporting thesaurus...". No serious case is made for an analytico-synthetic documentary language to allow pre-coordination of terms and no research is cited to suggest that there is no reason to believe it will support the users we actually have or contribute significantly to recall and precision even though it involves tremendous investments in intellectual resources. It seems to me irresponsible to urge it on the whole profession without some evidence of its utility. The final chapter on indexes in paper form seems slightly out of place; I'm not sure why it is in this volume at all.

REFERENCE

1992 Buyers Guide and Consultants Directory, Computers in Libraries, vol.12 #7, 1992 p.16-89

This is a valuable listing of products and services offered to the library marketplace with good indexing and up to date addresses. Like most directories, it is non-judgmental but aims to be comprehensive.

1993 Multimedia Tool Guide, New Media, Special Tool Guide Issue 85 p. including product and vendor index

Contains short entries, written by experts in each hardware and software category, on over 350 products.

JOURNALS & NEWSLETTERS

Access Reports (ISSN 0364-7625) [Access Reports Inc. 417 Elmwood Ave., Lynchburg VA 24503; 804-845-5527, fax 804-846-6928, $300 24 issues p.a.]

For almost two decades this has been the principal vehicle for disseminating information about FOI activity and remains so. Its been a while since I checked it out - I now find it covers Canada too.

Electronic Dissemination Partnerships [Interdepartmental Working Group on Database Industry Support, Sysnovators Ltd., 17 Taunton Place, Gloucester K1J 7J7; 613-746-5150;f.746-9757] CDN$149 p.a.

This previously free Newsletter summarizes developments in U.S. and Canadian Electronic Dissemination of Government Information policies and practices and provides contact numbers for further information. Vol.1#2 included information on public access networks in Hawaii, Kansas, California, Ottawa, and throughout the Canadian government, notes on new Treasury Board and U.S.OMB policies, and news on NREN, EEC initiatives and Statistics Canada programs. Vol1#3 continued the US and Canadian, Federal and provincial government perspectives. Eclectic, but of considerable interest to those trying to track government responses to the electronic age.

Government Technology [GT Publications, 9719 Lincoln Village Dr., Suite 500, Sacramento CA 95827; 916-363-5000; fax 916-363-5197; free to "qualified" subscribers

The newspaper format journal on managing state and local government information is better than many such freebees - as recent issue contained genuinely useful information on the Texas open systems initiative migration plans, Minnesota's online voter registration system, Idaho's environmental management system, Portland Oregon's multimedia kiosk public information systems and the use of computers in a Georgia county Superior Court, plus the usual array of industry notes. If you are in government archives and don't get it, just ask the publisher.

Limited Addition (Newsletter of the Australian Society of Archivists Collecting Archives Special Interest Group)

The first 2 issues of this newsletter (Jan & August, 1992) contain several articles by antipodean archivists on the APPM, RAD, MAD debates as seen from down under. I'll provide copies to interested readers.

Popular Culture in Libraries [ISSN 1053-8747] vol.1 #1 1993 contains report on a variety of special materials and manuscript collections, including comic books, photographs and popular music and reviews of books on popular culture and its artifacts. (Haworth Press, 10 Alice St., Binghampton NY 13904-7981; $28, indiv.; $36 inst.)

Privacy Journal (ISSN 0145-7659) [P.O.Box 28577, Providence RI 020908; 401-274-7861] Monthly, $109 p.a.

Six pages of type capture a range of court decisions, reports on Congressional action, news brief and citations to publications on privacy. The issue I have is vol.18 #10, August 1992 and the sub-title is "an independent monthly on privacy in a computer age", but its the first time I've run across it.

SPECTRA [Museum Computer Network, 5001 Baum Blvd., Pittsburgh PA 15213-1851] contains an increasing number of valuable articles including, in v.19,#3/4:

» Judi Moline "Towards Open Multimedia Systems for Museum Objects and their Documentation" p.2-8

» F.Mintzer,Y.Yao and J.D.McFall, "A Computer System for Scanning and Cataloging the Art of Andrew Wyeth" p.9-15

ARTICLES & BOOKS

Charles Dollar, **Archival Theory and Information Technologies: The Impact of Information Technologies on Archival Principles and Methods** (University of Macerata, Macerata Italy, 1992

In the 65 pages of text which comprise the body of this booklet, Charles Dollar lays out the consensus conclusions reached in over a year of discussion and revision of a paper he prepared leading up to the Specialist Meeting held in Macerata Italy in May 1991 and by the resolution of debates at that meeting (reported in Archives and Museum Informatics vol.5#2). The result is an exceptionally import contribution to the literature on electronic records management both because it captures the state of professional knowledge at a moment in time and because it enabled many participants in the dialogue surrounding its evolution to crystallize their thinking. The fifth chapter, Recommendations, also appears in the Menne-Haritz volume below.

Terry Eastwood, Editor, **The Archival Fonds: from Theory to Practice** (Bureau of Canadian Archivists, Planning Committee on Descriptive Standards, 1992) 225p.

This volume was conceived as a vehicle for explaining to Canadian archivists the theoretical basis for the concept of fonds upon which the Rules for Archival Description are based. Although the volume failed to convince me that the concept of a fonds is a rigorous theoretical construct for that nexus of organization and activity which creates records, the individual essays are fascinating and important. Three articles explore the idea from different angles: Terry Cook nearly succeeds in building a definition for this slippery beast, when James Lambert and Jean-Pierre Therrien demonstrate that even in French speaking Canada the fuzziness of the concept is so profound as to produce radically different interpretations. Heather MacNeil examines how to apply fonds following the Canadian Rules for Archival Description (RAD but doesn't convince me that the result helps us to better understand the provenance. As has been the case since the RAD work began, the underlying assumptions about the implementation and data model in Canadian discussions of description seem to dictate conclusions about theory rather than the other way around. In saving the fonds, have the Canadian reinvented the same problems they solved when they slayed the record group?

Information Handling in Offices and Archives, Angelika Menne-Haritz ed., (New York, K.G.Saur, 1993) 197 pp.

These proceedings of a working symposium held in Gladenbach near Marburg in October 1991 contain the papers of that meeting (reported in Archives and Museum Informatics vol.5 #3) together with an introduction and analysis by the editor. Seeing them in an edited volume, I am struck again by what an exceptional set of contributions they were and how much of their content broke new ground and continues to be extremely valuable. I strongly recommend this volume to anyone concerned with management of electronic records.

Colleen Phelan, "The Dickens House Museum Library: a hypermedia prototype", **ASLIB Proceedings**, vol.44#9, Sept. 1992, p.309-318

This hypermedia project used Guide 3.0, reviewed elsewhere in this issue, and may therefore be interesting both in itself and for the example it gives of the uses of such an authoring tool. The article provides a full range of screen samples.

Jean Armour Polly and Elaine Lyon, "Out of the Archives and into the Streets: American Memory in American Libraries, **Online**, vol.16 #5, 1992, p.51-57

This very informal evaluation of the experience of using American Memory products in half a dozen libraries suggests the need for a rigorous evaluation by raising more questions about their use and usefulness than it answers.

Nan Poulios, "Tame the Tiger", **LAN Magazine** v.7#9, 1992 p.77-

The author identifies six generations of forms and makes it clear through her discussion that the latest of these generations pose significant challenges to records managers. The fifth generation of intelligent forms, which seek data in appropriate databases and calculate some of their fields based on values in others is already upon us. The sixth generation, involving automatic routing of forms based on user-defined procedural routing which can itself be "intelligent" in that it varies based on values in the data. It is evident why businesses will adopt such forms, but challenging to consider how to archive them and the algorithms and user tables which drive them.

Marcia Reed, "Navigator, Mapmaker, Stargazer: Charting the New Electronic Sources in Art History", **Library Trends**, vol.40#4, Spring 1992 p.733-755

This is an excellent overview of the resources for art history available in electronic form. In addition to its value for art historians and librarians, I think it is valuable reading for anyone interested in cultural documentation because of the suggestive value of the range of resources about which Reed reports.

Mark Rorvig, "A Method for Automatically Abstracting Visual Documents", **JASIS** vol.44, 1993, p.40-56

Rorvig proposes a method for sampling frames of motion images for changes that will be significant to index and abstract film using stills and surrogates. It is said to work reasonably well in scenes of human action but looks to me as if it would fail to be useful in sampling continuous changes such as in weather or plant growth.

Helen Willa Samuels, **Varsity Letters: Documenting Modern Colleges and Universities** (Metuchen, NJ, Scarecrow Press, 1992) 281p.

Helen Samuels demonstrates in this volume that taking a functional approach to an organizations provides valuable guidance to archivists in the processes of formulating collection strategies and conducting appraisals. By examining what activities universities engage in and how these relate to their fundamental purposes, Samuels exposes a larger framework for documenting an individual institution than is provided by passively receiving its extant record and evaluating its historical significance. Like her work on multi-institutional documentation strategies, this major contribution to the archival literature reveals the broader social context of documentation and relates it to the tactics which archivists must use to preserve the relevant past for future understanding. In my view the methodology by which we find relevant functions and relate them to documentation is left under-explored, but most aspects of this work are exceptionally valuable nonetheless. I'm particularly pleased to see Samuels' consistent assessment of the value of published sources which is a valuable antidote to the archival tendency to appraise unpublished primary sources as if no published materials existed.

Manual of Curatorship: A Guide to Museum Practice, second edition, John M.A.Thompson ed. (Boston, Butterworths, 1992) 723p. + index, $125

This massive volume consists of over 70 edited articles by museum professionals on aspects of the museum context (in the U.K.), management, conservation, collections research and user services. The orientation of most contributors is British, which accounts for some of its strengths and weaknesses. The volume is very strong in areas of conservation and collections research, but to my mind seriously flawed by the little attention paid to collections management and the inadequate treatment of automation. The single article on the subject of "Information technology in museums", by Tim Pettigrew, Registrar of the Tyne & Wear Museum, Newcastle, is seriously dated and terribly superficial. The absence of a single post 1989 citation (the majority dating pre-1985) may be acceptable in some areas of museum practice but it is unacceptable in the area of automation. One wonders what areas the second edition updated if the last edition was revised in 1989?

Elizabeth Yakel, "Pushing MARC AMC to its Limits: The Vatican Archives Project", **American Archivists**, vol.55#1, 1992 p.192-200

Yakel reveals the serious need for a vocabulary of form of material (diplomatic forms) and the requirements for software with hierarchical linking displays in the management of the records of the Vatican, and makes other useful observations about the differences in assumptions underlying the purposes of description in U.S. and foreign archives. [See also Conferences reports in this issue]

EPHEMERA

Canadian Guide to CD-ROM Publishing, 2nd Edition, February 1992 (Ottawa, Optim Corporation, 1992) [338 Somerset St. West, Ottawa K2P 0J9; 613-232-3766; fax 613-232-8413] 118pp.

This may be the best introduction to all aspects of CD-ROM publishing to appear in print although it is basically only advertising literature for OPTIM Corporation. It contains an excellent mix of theoretical discussion, cost information and concrete checklists for preparing publication for publishing. It discusses a variety of options for data preparation including in-house, service bureau and co-publishing without prejudice and it includes valuable ap-

pendixes of additional references, standards facts, and names and addresses of North American CD-ROM Manufacturers.

William Sheridan, **Principia Informatica: The Laws of Informatics** (Ottawa, 1991) 126 pp. typescript

This typescript circulated by the author (Research Branch, Library of Parliament, 907-151 Sparks St., Ottawa K1A 0A9) is simultaneously fascinating and annoying. The premise, that the author has discovered three laws of informatics equivalent in their importance to the laws of Mechanics and Thermodynamics, is, of course, not modest. Nevertheless, one is driven to read through the whole of this work by the incredible range of the sources regarding the character of information which contribute to the argument and by the implications Sheridan explores for the "laws of informatics". If you have the patience for reading this slightly grating volume you will be rewarded by new insights and by a deeper understanding of the apparently simple "laws" that: 1) "Probability varies with the availability of information"; 2) "Utility of information depends on its relevance"; and 3) "Cognizance requires continuing feedback". If not, you will probably confirm why this is a typescript and not a best seller.

RECENT BEARMANIANA

I have been asked to cite my own writings in these pages so those who wish can to track them down. Sorry.

"An Indefensible Bastion: Archives as a Repository in the Electronic Age", in David Bearman ed., Archival Management of Electronic Records, **Archives and Museum Informatics Technical Report** #13, (Pittsburgh, Archives & Museum Informatics, 1991)

"Interactive and Hypermedia in Museums", in David Bearman ed., Hypermedia and Interactivity in Museums: Proceedings of an International Conference, **Archives and Museum Informatics Technical Report** #14, 1991 p.1-6

"Technology's Impact on the Professions Who Manage it", Current Issues in Government Information Policy Conference Proceedings (Frankfort KY, Kentucky Information Systems Commission, 1991) p. 11-23

"Information Technology Standards and Archives", **NAGARA Clearinghouse**, vol.7(3) Summer 1991 p.10

"Museum Information Standards: Progress and Prospects", in Stephen M. Spivak and Keith A. Winsell eds., **A Sourcebook of Standards Information** (Boston, G.K.Hall, 1991) p.253-265

"Computer Interchange of Museum Information", **Bulletin of ASIS**, vol. 18 (2), December 1991/January 1992 p.14-16

"Retrieval Requirements of Faceted Thesauri in Interactive Information Systems" with Toni Peterson, in Susanne Humphrey and Barbara Kwasnik, Advances in Classification Research: Proceedings of the 1st ASIS SIG/CR Classification Research Workshop (Medford NJ, Learned Information, 1991)

"Information Exchange Requirements of Archives and Museums" in Roberts, Andrew ed., **Sharing the Information Resources of Museums**, (Museum Documentation Association, Cambridge UK) p.119-123

"Contexts of Creation and Dissemination as Approaches to Documents that Move and Speak", in Documents that Move and Speak: Audiovisual Archives in the New Information Age, Proceedings of a symposium, National Archives of Canada, April 30-May 3, 1990, (New York, K.G.Saur, 1992) p.140-149

"A User Community Confronts IT Standards", **Journal of the American Society for Information Science**, Vol.43(8), p.576-578

"Interactive Multimedia in Museums" in M.Buckland and S.Stone eds., Studies in Multimedia: State-of-the-Art Solutions in Multimedia and Hypertext, (Medford CT, Learned Information, 1992) p.121-138

"Information Technology Standards and Archives", **Janus**, 1992.2 p.161-166

"Archival Principles and the Electronic Office", Information Handling in Offices and Archives (K.G.Saur, New York, 1993) p.177-193

"Diplomatics, Weberian Bureaucracy and the Management of Electronic Records in Europe and America", **American Archivist**, vol.55 (1) p. 168-180

"Archives and Museum Information Systems: State of the Market, 1992", in Belinda Wright and David Bearman, compilers, 1992-93 Directory of Software for Archives & Museums, **Archives and Museum Informatics Technical Report** #15, (Pittsburgh, Archives & Museums Informatics) pp.i-iii

"Documenting Documentation", **Archivaria**, #34, Summer 1992 p.33-49

"New Models for Management of Electronic Records by Archives", **Cadernos** (Journal of the Portuguese Association of Librarians, Archivists and Documentalists), #2, 1992 p.61-70

"Organizational Accountability in the Evolving Electronic Communications Environment", forthcoming **Archives & Manuscripts** (Journal of the Australian Association of Archivists)

"The Impact of Automation on Museums" forthcoming **Museum** (UNESCO)

"Multimedia and Museum Requirements for Networking", forthcoming, Proceedings of the Library of Congress Network Advisory Committee, December 8 1992

NEWS

US NATIONAL ARCHIVES TROUBLES

Like Queen Elizabeth, 1992 may be a year upon which the U.S. National Archives may not look back on fondly. The most recent trouble began with the release of a report by the Committee on Government Affairs of the US Senate in October 1992 entitled "Serious Management Problems at the National Archives and Records Administration". The report charged that the Archivist of the United States and the Deputy Archivist interfered with the Inspector General of NARA, that staff destroyed records for which they were asked by the Committee, and that insider information was leaked during a competitive bid process. [Serious Management Problems at the National Archives and Records Administration, Report by the Committee on Governmental Affairs, United States Senate, October 1992 (Washington DC, USGPO, 1992)]

Within a month an unrelated report by Seymour Hersch in the New Yorker revealed that National Archives officials interfered with the planned release of access to the Richard Nixon tapes, apparently giving in to political pressures.

Early in December the GAO criticized the National Archives Office of the Federal Register for failing to implement electronic information technology in the production of the Register or in its dissemination. The report does not discuss the relationship between the Federal Register and the program of the National Archives which has long been a hobby horse of mine, but I believe that substantially more money could be saved by understanding the potential of the Register to drive scheduling, appraisal, description and retrieval of Federal records than even by improving the production process. [General Accounting Office, Federal Register: Better Electronic Technology Planning Could Improve Production and Dissemination, GAO/GGD-93-5; contact 202-275-6241)]

Also in December, Judge Charles Richey let the Justice Department know that he was going to order that the electronic mail from both the Reagan and Bush White House be preserved despite arguments from the Government, supported by the Archivist, that this material was not a "record". The decision was released January 6, 1993. [See lead editorial]

NARA ESTABLISHES STRATEGIC PLANNING GROUP

The Archivist of the United States, Don Wilson, launched a strategic planning exercise within NARA just as the criticisms of his agency from the outside reached a crescendo in mid November. The working groups for the strategic planning exercise contacted numerous outsiders such as myself early in December and asked us to tell them how NARA has been most and least effective and what the top priorities for NARA over the next five years should be. After the phone interview we were invited to send any further ideas along to Wilson. Sadly, I found that I had made strategic recommendations which are entirely applicable today in a talk to the National Archives Assembly December 15, 1981.

FEDERAL RECORDS CENTERS ELECTRONIC REFERENCE

The National Archives Office of Federal Records Centers has initiated electronic processing of reference requests from agencies storing records at the centers. The system involves agencies using a purpose built software system for the PC to link into the National Archives mainframe in St. Louis which sorts requests and transmits them to the centers for processing.

NHPRC GRANTS ELECTRONIC RECORDS STUDY

The National Historical Publications and Record Commission awarded $359,580 to the University of Pittsburgh for a three year study to address the first three questions in the agenda outlined in the Commission funded report Research Issues in Electronic Records. The project, to be led by Richard Cox and Jim Williams, will involve seven members of the University faculty and David Bearman of Archives & Museum Informatics, aims to:

1. identify the archival functional requirements for electronic information systems serving widespread business application and to evaluate alternative approaches to satisfying those requirements;
2. identify attributes in organizations, business applications and software applications which influence success in achieving archival control over electronic record systems; and
3. suggest criteria to evaluate and indicators to measure the effectiveness of archival policies, methods and programs in electronic offices and computer assisted organizational functions.

[For further information contact Richard Cox, SLIS, University of Pittsburgh, Pittsburgh PA 15260; 412-624-3245]

AN ELECTRONIC DISTRIBUTED ARCHIVE

The Electronic Pierce Consortium is a multi-disciplinary group of researchers interested in the work of Charles Sanders Peirce, whose philosophical and semiotic research (of nearly 100,000 manuscript pages plus 10,000 published pages)in the nineteenth and early twentieth centuries is largely inaccessible. The Pierce Edition Project at the University of Indiana is publishing a thirty volume critical edition but won't be finished until early in the next century. The editing project is working with Harvard University which has the manuscripts to incorporate images and SGML marked text of unpublished writings and with others to use the archive on the NREN. The project will develop client/server software for open systems to access the EPC. For more information and an overview of the projected architecture and associated tool libraries, contact Christian Kloesel, Editor of Peirce Edition Project, 317-274-2173 or IMQL100@indycms.bitnet.

CULTURAL HISTORY COLLECTIONS INFORMATION INTERCHANGE

The Cultural History Information Task Group of CIMI and the AASLH held a final working meeting on December 2 at which they approved a format for "Scope of Collections" data which will be published with a discussion of its uses in a spring issue of History News. They also discussed an ambitious effort to define a "Scope of Reference Collections" data exchange but found that their initial test produced widely divergent results and needed to be further refined. Because the funding for this effort from the Pew Charitable Trusts will soon expire, it is doubtful that they will pursue the Scope of Reference Collections interchange further. For further information contact: John Perkins, CIMI Project Officer, RR1 Boothears Pt., Halifax B0J 1G0, CANADA; 902-826-2824 (and note his new address and phone number).

MULTIMEDIA TO THE HOME

The Microelectronic and Computer Technology Corporation (MCC), a cooperative R&D organizations whose members include dozens of major corporate players in electronics, has launched "First Cities", an initiative aimed at eliminating the technical barriers to delivery of integrated, multimedia services to homes and businesses, including multimedia teleconferencing, interactive games, entertainment on demand, shopping, distance learning, and healthcare information delivery. First Cities is now in the business plan phase but is expected to enter a network development and architectures phase in early 1993. Enabling technologies slated for Phase II development include: software to allow individuals to connect their homes to interactive, multimedia service networks; software to allow delivery organizations to provide a gateway with which consumers can connect, and application services which people will want as well as to test the services and delivery in selected sites. First Cities is expected to be fully operational, built on interoperable technologies, by early 1995 so that customers in some sites will receive services from cable providers and in other sites from the local phone company, over fibre, or on micro-cellular networks. The project hopes both to create a market demand, develop common user interfaces, and synchronize hardware and software developments. For more information contact Bill Stotesbery at 512-338-3785.

MUSEUM COMPUTER NETWORK

Even though it had its best attended meeting ever, attracted the most pre-conference workshops and workshop participants,sponsored its largest ever exhibit hall, and made the most money it has ever earned from a conference, the MCN Board had to close the Pittsburgh office to keep the organization, which was teetering on the edge of bankruptcy, from slipping in. For the next year anyway, MCN will be run by its volunteer committee chairs and their active committee members. For policy decisions contact: Rachel Allen, Board of Directors Chair, National Museum of American Art, Washington DC 20560; 202-357-1626. For membership contact either Bob Lemming 215-787-5413 or Leslie Johnston 504-523-4662. For **SPECTRA** contact Suzanne Quigley 313-833-0261 or David Bearman 412-683-9775. For the 1993 conference in Seattle contact Diane Zorich 617-495-1969. For CIMI contact John Perkins at his new phone number 902-826-2824.

GALILEO EINSTEIN ELECTRONIC ARCHIVES PROJECT

Among the announcements at the CNI meeting was one of two pilot projects devoted to establishing electronic archives of the works of great scientists. The Einstein project is jointly funded by NSF and the German government with the aim of bringing together published and manuscript versions of Einstein together with scholarly tools for publication, together with a "comfortable" user interface on CD-ROM. The Galileo project will reproduce electronically the unpublished collection of the Accademia del.Cimento in the Biblioteca Nazionale in Florence. It is supported by the Italian government.

UC BERKELEY LAUNCHES ONLINE FINDING AIDS TASK FORCE

The U.C.Berkeley Library and the Museum Informatics Project have launched a task force to develop means to automate creation and maintenance of and provide access to finding aids as part of a long-range project to create interlinked databases of finding aids and digitized images of archival, manuscript and pictorial materials. The project is investigating developing a finding aid DTD for SGML and appropriate indexing, searching, printing and display software. [Contact Daniel Pitti, Authorities Librarian, the Library, U.C.Berkeley, Berkeley CA 94720]

INTELLECTUAL PROPERTY DISCUSSIONS

The Interactive Multimedia Association has launched a series of task groups as part of its Licensing Paradigms and Strategies initiative to "undertake component surveys, discussions and essays" that will be integrated into The IMA Intellectual Property Handbook. Among these are a task group on "Agencies, Collectives and other Clearinghouses" chaired by Joseph Alen (Copyright Clearance Center) and Nathan Benn (Picture Network International). David Bearman is collecting views from museums on their attitude towards the benefits and drawbacks of rights collectives and clearinghouses. Contact him at 412-683-9775; fax 412-683-7366.

ELECTRONIC RECORDS GRANT GUIDELINES

The National Historical Publications and Records Commission is distributing new guidelines for electronic records projects with an application deadline of June 1. Draft proposals are encouraged by April 1. For further information, contact: Lisa Weber, NHPRC, National Archives Building - NP, Washington DC 20408; 202-501-5610.

SOFTWARE

Authority Reference Tool

Authority Reference Tool [Oxford University Press, 200 Madison Ave, NY,NY,10016;800-451-7556] $125, with 15% off until February 28

Considering that the first three volumes of the AAT are listed for $250 and that the supplement costs another $50, the Authority Reference Tool edition of the AAT, an electronic edition which slides neatly under your own PC software environment (whether a database or a word processor or both), is a great bargain. In addition to providing the full text of the over 2000 pages in all three original volumes and the supplement, together with an introduction, a users manual and a Dan Bricklin tutorial, the ART version integrates the indexes and updates the term changes which the paper supplement cannot do.

The software is installed as a memory resident utility which enables users to "cut and paste" into their own application, whether a database or a document, after the command "Ctrl-Shift-a" automatically launches the AAT and locates the user at the term on which their cursor was located. The default display shows the term in its appropriate hierarchical location within the vocabulary, but it is possible to display alternate and synonymous terms, view full scope notes, or search for a different terms or browse a different hierarchy. One quite useful command allows the user to view the previous 10 searches which shows the trail from which the search for the proper term has followed. Of course, there are improvements one can imagine for this product or any other (including getting around its limitation of looking only for a single word instead of integral two word clauses), but it's a great bargain. Not only does it make life easier for anyone using this vocabulary now, it suggests tremendous opportunities for future applications. Indeed the J. Paul Getty Trust AHIP program intends to make other of its vocabularies currently under development, such as the Union List of Arts Names and the Thesaurus of Art Place Names, available using the same tool. Hopefully Mac and UNIX versions will be developed by the Getty or a licensee and the tool will itself be made available to others providing authority data to archives and museum users.

D.B.

ARCHIVIA CD-ROM 1992

The National Archives of Canada has published ArchiVIA CD-ROM 1992 containing five databases (archival holdings, microform holdings, art transparencies, maps on microfiche and archives bibliography), along with documentation and a run time copy of CD Answer Retrieval Software on a CD-ROM for CDN$169.00 (395 Wellington St., Ottawa K1A 0N3 CANADA). The product is a result of a "Public Access System" project launched in October 1990 and directed by Chris Seifried of the Informatics and Records Services Branch.

The installation procedure is simple and the documentation, including the quick reference guide which comes with the package, is clear. Installation instructions, documentation and the databases are all bi-lingual French or English based on user choice. Context sensitive help is available using F1. The underlying search software is extremely fast and very powerful. It allows Boolean searches with AND, OR, WITHOUT and proximity searches with adjacent and proximity operators and supports truncation.

Each of the five databases, is provided with a different search screen. Each can be searched by keyword and when applicable by microform reel/fiche number, classification number or call number, date, title or author/creator.

The issuance of this CD, a general catalog of holdings and an associated professional bibliography, is a landmark achievement of which the National Archives of Canada can be justly proud. It marks the first time a national archive anywhere has provided such ease of access to citizens and researchers and I look forward to the regular updates promised. Even in this first release, the general quality of the results retrieved by this tool is excellent. As with most large databases, there are some anomalies caused by poor indexing, displays that are not fully thought through, and software functionality which produces misinterpreted results. I expect these will be gradually eliminated as the tool matures.

Experienced users of other databases will at first be startled because searches for more than one term are ANDed both within a field and between fields unless otherwise specified. They will however be delighted at the variety of explicit operators they can express in searches if they are willing to write out the full expression. A simple keyword search of 183,513 audio-visual records found 2949 using the term "agriculture", 8 using "agriculture trade", none with "agriculture trade wheat" and five with what I really wanted: "wheat trade". GOf these one was a film, two were movies and two were press conferences. In one of the press conferences, Prime Minister Pierre Trudeau is asked about the U.S. sale of wheat to the Soviet Union despite its embargo on such trade. A more detailed examination of this record revealed one type of problem associated with this database at the present time: misleading indexing. The entry is indexed under 'Embargo - United States' and 'Trade - United States' although the implicit subject in all cases is Canada. The result in the suggestion in the indexing that Canada had an embargo on the U.S. and that these records were about trade between Canada and the U.S..

Another type of retrieval problem is created by the way the software handles indexing of dates. Searches of the dates fields for the range 1857-1867 (a nice feature) retrieved the Entomological Society of Canada records 1950-1983 because the society was founded in 1863 and this is noted in the description! On the other hand, searches for the single year 1863 does not retrieve many records which were created on that date but are ex-

pressed as a range crossing 1983 (1857-67) because only literal recordings of the date 1863 are found.

Definition of the fields creates a third retrieval anomaly. For example, truncated searches in the names field (a typical way of seeking people by their last names) results in less useful hits than anticipated because the search takes place on all characters in the name field. For instance, searching Ad* produced 8 records, none of which had a last name beginning with 'Ad'. Instead they had middle names beginning with 'Ad' or were Admirals.

Finally, the designers need to rethink how to display results in each of the databases or the user should be given more options. When we search the maps database for "Hali*", we find 651 maps of Halifax and its environs (although none of the many thousands of maps upon which Halifax appears but not in the title or primary description). Unfortunately the display shows us these maps in fiche number order rather than by date (displayed in the brief display but not sorted) or full title (some of which indicate that they are maps of specific Halifax neighborhoods).

None of these drawbacks in the current release of ArchiVIA CD-ROM should detract from its acquisition by research libraries or its heavy use by researchers. The speed of searching and the flexibility of the command language based approaches make it easy for users to work around these quirks and find materials they would never have imagined without such a tool. For example, I ran the search of the audiovisual database using explicit operators and found 5611 Trade OR Agriculture OR Wheat records, 5290 Trade OR Agriculture NOT Wheat, and 87 Trade AND Agriculture NOT Wheat records - the longest search requiring about 7 seconds.

The National Archives of Canada is to be commended for releasing the product as quickly as it could, knowing that there would be room for improving it in the future. Too many archivists would never release a comprehensive finding tool such as this out of fear that it would contain errors, as any product of this size must.

D.B.

COLLECTION

Vernon Systems [P.O.Box 6909, Auckland New Zealand; 649-302-3147; f.649-302-3150] has repackaged its software product "Collection" again. Instead of offering two levels of complexity at different prices, the product has now been rewritten and will sell as "Standard Collection". Vernon Systems is still willing to sell tailored versions of Collection developed from the same toolkit but will now sell only one unmodified version. In November I had an opportunity to spend the day looking at Standard Collection. While the situation was one in which the software was running on a Vernon Systems PC and they were present, I was able to take it through its paces enough to give it this review.

* * *

Standard Collection runs on a minimum workstation configuration of 25 MHz 80386 with 2MB RAM and an 8 bit LAN card and a minimum file server configuration of a 33 MHz 80386 with 6MB RAM and a 16 bit LAN Card. In both case 486 computers and double speed processors with considerably more RAM are strongly recommended. Collection is a bit of a hog! It is built on version 2.12 of Advanced Revelation (ARev) from Revelation Technologies and comes bundled with the Blackhawk Database Graphics Toolkit an imaging package from Blackhawk Data Corporation. Collection will run under Windows 3.1, supports SQL queries and release 3.0, scheduled for late 1992, is mouse driven with standard GUI features.

Standard Collection cost US$4000 for the Cataloging module and US$6000 for the Collections Management module plus US$1000 per user for multi-user versions. First year license maintenance is included and subsequent years are 10% of the current value of the license fee. Support is available at 10% of the current license value plus expenses or at US$90 p.hr. or US$550 p.d.. Standard Collection is installed in about 10 sites, half in the U.S. and half in New Zealand and Australia. Tailored versions are installed in an equal number of institutions.

Standard Collection is designed with two modules: Cataloging and Location Recording (including reporting) and Collection Management (including loans, acquisitions and conservation). When I reviewed the product, only Cataloging and Location Recording was available; the Collection Management module is promised for 1993. There is looseleaf documentation for the manager and the end user which seems to adequately define the program, although I didn't have the benefit of having it at the time I was using the system to check for consistency. Help is context sensitive but not user modifiable.

Cataloging uses over 250 fields organized into 18 logical groupings. Data definitions encompass the MDA, CHIN and Common Agenda data standards and fields are variable occurrence, variable length and dictionary or value table validated as required. All data entry views of the database are pre-designed in Standard Collection although users may get special data entry views made for them by Vernon Systems at a cost of about 1 day of support. View only (as opposed to data entry) views can be created and maintained by end user systems administrators.

The basic Object Data Entry and Enquiry menu (two layers deep) provides the choice of a screen or screens for: Identification; Acquisition & Provenance; Administration; Condition & Treatment; Copyright,Insurance & Value; Creation/Production; Deaccession; Documentation; Exhibitions & Loans; Field Collection; Location; Measurement; Medium, Support & Technique, Photographs; Physical Aspects; Storage Requirements; Subject & Associations; View. Users can branch to another window without returning to the higher level screen and data is generally organized so that little branching would be required in typical processing.

Collection permits object hierarchies in which objects belong to groups and have parts with unlimited numbers of levels of grouping. Beyond naming groups (site, department, collection, lot etc.) the user does not need to do anything to get intelligent higher level displays and links. Authority control files (over 100 are included), range from simple value tables, to vocabularies and thesauri, and on to complex reference databases such as persons and places which have extended biographical and historical associations. Value controlled fields will "pop-up" a browsable list if the term entered is not correct. Users can then branch to the full authority record and to maintenance if they wish to edit the record. Vernon systems is justly proud of several data quality "tools" it has created for accession number (managing user defined systems and any historical patterns), dates (handling all sorts of qualifiers and ranges), measurements (dealing with translations between all types of systems) and location (keeping separate track of usual, new, and last seen positions).

Retrieval can be from a data entry window (query by example) based on indexed terms such as object id, name, person name and combinations of indexes or by Boolean search with construction of intermediate search sets that can be manipulated further. Query by example assumes OR within a multi-values field and AND between fields. It permits searching of terms controlled by classifications exploding up and down hierarchies and allows users to browse values in a field prior to selecting an item from the list. The number of hits on each term is displayed along with the total for the search as a whole. Queries may be combined, sets may be saved as lists and the results of one search can be given as the search criteria for a search of another file. Brief displays are defined dynamic views and are adjustable to the requirements of the user and sensitive to the types of object being retrieved (photographs can have a different short view than natural specimens, for example).

Collection does not come with any predefined reports. Users may define reports by choosing the format (such as columnar or page), the fields to display, the fields to sort, and output headings and may save reports under user defined names. Column totals, averages and symbolic (calculated) fields may be specified. Documents can be created with Word Perfect and other word processors and merged with data from the database. Label formats are supported. Reports can also be written in R/BASIC for specialized purposes such as batch processing.

System functions such as security (by data and process) and audit trailing (for any process) are exceptionally sophisticated for a PC package and should satisfy any museum. ARev supports Novell networking and has a reasonable array of import/export facilities and openness to other systems.

Overall, Standard Collection as I saw it in November, was a highly sophisticated collection documentation package, but lacking its collection management functionality, which in earlier versions displayed impressive procedural controls, the products was seriously flawed. In addition, Collection has had a troubling performance history; users have complained of slow response and of significant limits on the numbers of users that can reasonably be online simultaneously. While Vernon Systems has tended to regard these as ARev problems or to solve them by throwing faster systems and more RAM at the application, I have found other applications of ARev which do not have these limitations and are not as hungry for souped up CPU's. When Vernon does release the Collections Management module, users will want to benchmark the systems under demanding use conditions to assure that they can grow to support the data and workstation requirements of the institution.

D.B.

New Planned Giving Release

PG Calc Inc. [129 Mount Auburn St., Cambridge MA 02138; 617-497-4970] has release version 3.0 of its Planned Giving Manager which now runs on PC and Mac platforms. The new version features more graphic reports and windows and sells for $1795 plus $495 for annual support. A limited version(Mini Manager) sells for $895 plus $395 annual support).

Full Text Retrieval

Management Information Technologies, Inc. [5 Vanderbilt Motor Pkwy., Suite 403, Commack NY 11725; 800-992-7211] and Readware Systems Corporation [Suite 600-1111 Melville St., Vancouver V6E 3V6 Canada; 800-661-6850] are aggressively marketing their full text retrieval software to archives based on the endorsement of the product by Doug Taylor Munro of the National Archives of Canada. Readware advertises itself as being proficient at fast retrieval of ASCII text from sources including OCR in several languages simultaneously. Readware claims that its 'Research Assistant' application "not only searches for matching words, it actually searches for matching concepts" and that it has a high degree of tolerance for misspellings. In addition, the vendors claim that READWARE technology uses fewer computer resources than other systems and requires no pre-processing of data including no indexing. The 'Research Assistant' also accepts natural language queries, although in my observation of it at the NAC I saw no evidence that it "understood" the operative terms such as "why" or "how", only that it stop listed them.

CD Author/CD Answer Hypertext

Dataware Technologies [222 Third St., Suite 3300, Cambridge MA 02142; 617-621-0820] is distributing its full text authoring and retrieval software which includes a library of objects written in C + + that can be combined to customize a variety of retrieval functions. Together with other Dataware products, such as CD Prepare Premaster System and possibly CD-Record (for locally recordable CD's using the Philips CDD521 Recorder), this software provides full in-house CD authoring and distribution functionality.

Word Processing to SGML

Agfa CAPS [800-568-0692] advertises Shared Document Management System (SDMS) an environment intended for publishers to add value to word processing documents by automatically marking up their visible attributes for composition and data interchange.

Visitor Tracking and Course Registration

Aceware Systems [1828 Erickson, Manhattan KS 66502; 913-537-2937] showed up at the MCN meeting this fall with a course registration package they are anxious to turn into something of value to the museum marketplace. Developer Chuck Havlicek showed a quick appreciation for the differences between traditional schools and museum exhibits and was able, during the course of the two day exhibition at MCN to redefine his databases and interfaces to look a lot like what a museum needs. It will be interesting to see if he can keep evolving his modestly priced PC product. Any beta sites in Kansas? The free demo discs give a good sense of the range of the application.

Tell Them - They'll Listen

R.A.Gray Inc. [9181 Chesapeake Dr., San Diego CA 92123; 619-560-4162] is offering an interactive voice facility called 'The Sound Solution' which combines a commercial CD-audio player with push button access to tracks of pre-recorded sound for museum exhibits, multilingual information systems, oral history access. Less expensive than any other kinds of interactives, it may be equally attractive in some cases.

Perseus Project on CD

Yale University Press [92A Yale Station, New Haven CT 06520; fax 203-432-2394] is distributing the Annenberg/CPB funded Perseus project database on CD-ROM, videodisc and printed User's Guide. The complete package sells for $350; a demonstration videotape is available for $10. The software is Hypercard and requires a Macintosh platform with linked CD drive and videodisc drive to use fully.

Perseus 1.0 is intended to support teaching and study of Greek art and archaeology, history, language and literature (the complete works of Homer, Aeschylus, Sophocles, Herodotus and Thucydides and works by many other authors are included in full text, in English and in Greek along with thousands of art objects and site plans. The product is testimony to the vision of a large number of classicists, and of Gregory Crane who was its chief editor, but its value will be demonstrated in its use by others. From the videotape (I did not receive and chose not to purchase the full set), it appears that there are many to integrate this resource with educational programs; to me the most interesting aspect of the project is that the data is all in SGML, a representation which facilitates its reuse later in new ways.

Library OPAC with Images

Carlyle Systems Inc., 2000 Alameda de las Pulgas, San Mateo CA 94403; 415-345-2500] has announced ImageOPAC as part of its new Voyager Series of library automation modules. ImageOPAC can show and provide authorized users the ability to edit multiple full color images associated with text retrieved through the OPAC. Carlyle is negotiating for beta sites.

Name & Subject Authority Control

Library Technologies Inc. [1142E Bradfield Rd., Abington PA 19001; 215-576-6983; f.215-576-0137] now guarantees 95% or more of a customers name or subject headings will be matched against Library of Congress authorities by its automatic matching processes or the file will be manually matched at the same price as automatic linking (a standard cost of 2 cents per record for each type of authority matched or 4 cents for name and subject). For a brochure describing the methods used for authority matching (these are in themselves quite interesting and useful for anyone considering introducing authority control), contact the vendor.

HARDWARE: Palm Size Computing Comes of Age

The latest generation of palm size computers are not for everyone but they can serve useful purposes. This note was written on an HP95 with 1MB RAM and a 1MB removable hard card. The entire device is only five inches long and three inches high and weighs less that 12 oz, and while it certainly doesn't permit touch typing, it runs for weeks on two AA batteries, communicates with local PC's and printer using a serial connection, communicates with remote devices using a modem, and runs seven built in applications well as any DOS application which is loaded onto RAM or a removable PCMIA drive. The built in applications include Lotus 1,2,3, an HP financial and scientific calculator, a calendar, a phone book, and a "memo" pad which apparently supports writing articles as long as the memory of the file. While the memo function is hardly a full fledged word processor, it does allow for marking and moving text, searching for character strings, and other basic word processing functions and it can allow downloading and uploading of files. While the normal, mode for viewing these files on the HP95 is 40 characters, the page can be defined as 80 characters wide and text wraps around automatically.

So what's a toy of this sort good for? It's great for the task of making an inventory in the stacks, it has attracted several national paging/voice mail/fax transmission services which will forward communications to your boss if she's outfitted with this device, and its convenient for those of us who have never been touch typists and who find the laptops we are using too heavy for day trips. True, these things will soon cost less, understand speech, have color backlit screens and send and receive multi-media, but I'm convinced that the palm sized computer has already found an acceptable niche.

STANDARDS

FIAF Cataloging Commission Urges Format Standard

The International Federation of Film Archives (FIAF) Cataloging Commission published a call for input on the development of a format for data interchange for film cataloging in the AMIA Newsletter, Fall 1992 p.5-8. For further information contact: Carlos Roberto de Souza, Member FIAF Cataloging Commission, Cinematica Brasiliera, Ceixa Postal 12.900, 04092 Sao Paolo-SP, Brasil; ph.(55-11) 577-4666

THESAURUS OF ART HISTORICAL PLACE NAMES

A discussion of the Thesaurus of Art Historical Place Names being developed by the Getty Art History Information Program, and samples of the types of printed displays in the projected product, was published by Patricia Harping in VRA Bulletin, vol.19 #3 (1992) p.26-32

ELECTRONIC RECORDS PRESERVATION I.

The Working Group on Conservation Standards and Technology of the National Archives of Canada submitted a draft report to the Electronic Records Coordinating Committee of the NAC Historical Resources Branch in November which summarizes conclusions of a year long evaluation of media standards and formats for electronic records retention. Concluding that no single technology yet serves as a long-term preservation media, the report concurs with virtually every study to date that NAC will need to copy data at least once a decade and recommends monitoring of DAT and CD-ROM over the next two years as potential replacements for the too costly 9 track tape.

ELECTRONIC RECORDS PRESERVATION II.

The Technology Assessment Advisory Committee to the Commission on Preservation and Access has issued a report by Michael Lesk entitled "Preservation of New Technology", October 1992 which summarizes the issues in obsolescence of technology and the current state of media standards. Although Lesk views electronic archives as either social science data libraries or full text literary manuscript corpa, the findings with respect to preservation issues are unobjectionable .

CULTURAL HISTORY INFORMATION TASK GROUP

The Cultural History Information Task Group of CIMI and the AASLH held its third and final meeting in Washington DC in December and accepted the draft of its final report recommending a content standard for "Scope of Collections" information. The "Scope of Collections" record is designed to enable cultural history museums to share information about their collections following the guidelines of the CIMI Standards Framework. "Scopes of Collections" are generalized descriptive overviews of logical groupings of objects along with directory information about the institutions with which the collections are associated. The data includes the institution name, address(es),phone, and contact(s) and repetitive elements of collection name, brief description, size, form, data(s), collection contact person (name address and phone) and indexing. The AASLH has agreed to publish the final report of the CHITG in the July/August issue of History News as a special Technical Report. [For more information contact John Perkins, CIMI Project Manager, at his new phone # 902-826-2824].

SUBJECT CLASSIFICATION OF AUCTION CATALOGS

Tom McNulty proposes a scheme for subject indexing of art auction catalogs based on the AAT in the Winter 1992 issue of Art Documentation. It involves assigning terms from each of the seven facets of the AAT plus time and geography and has the virtues of simplicity and use of an authorized vocabulary.

USER INTERFACE GUIDELINES FOR LANGUAGE SOFTWARE PRODUCTS

Visual Logic is the title of a pamphlet by Paul Kahn, Director of the Brown University IRIS project, with the sub-title User Interface Guidelines for Language Software Products. This appropriately handsome 38 page booklet published by Houghton Mifflin Company Software Division [One Memorial Drive, Cambridge MA 02142] is full of excellent suggestions about layout, typefaces, icons, contrast, margins, spacing and software intrusiveness which should be considered by software designers before they release their horrid little messes on the world. Get it.

NATIONAL INDEXING STANDARD

The NISO Committee on standards for indexing decided to refer to both displayed and non-displayed indexes in the emerging standard following deliberations at its third meeting. For copies of the next draft of the standard, contact James Anderson, School of Communication, Information & Library Studies, Rutgers, 4 Huntington St., New Brunswick NJ 08901; 908-932-7501.

MULTIMEDIA & HYPERMEDIA MODEL

ISO/IEC JTC1 /SC18 /WG1 has distributed a Working Draft of the Technical Report on Multimedia and Hypermedia: Model and Framework developed at its meeting in Chiemsee Germany in October for comment before January 30. The draft, edited by Lawrence Welsch of NIST, presents requirements for services of multimedia and hypermedia within the context of the Open Systems Environment model entities and interfaces including services for operating system, user interface, interchange, network and communication, data management, application management, modeling services, property management and system management and security. [For further information contact the convener, Charles Doty, IBM Corporation, MS 06-03-70, 5 Kirkwood Blvd., Roanoke TX 76299-0001; 817-962-5150]