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Complex or Bleeding Edge?

I recently became involved in a large imagebase project where one of the first management questions was whether we were involved in a large and complex undertaking or if we were involved in research and development on the bleeding edge. I realized that this issue is critical to many organizations considering undertaking such endeavors, so it was reasonable to identify criteria that would distinguish between the two.

An imagebase, or other multimedia project depends on raw data, on data management software, and on delivery systems. The research frontier could be found in any of these areas depending on the project requirements. Today we could accommodate essentially any volume of textual data supporting the imagebase, and provide access to it in free text or structured fields, without necessarily encountering a research frontier. But if we wanted to support access to all this text using hypertext links, we might find that for large text bases the tools that are available will not do a large job. We can scan images from prints, from negatives, from roll film but we might find ourselves at the bleeding edge if we decide to scan wall murals at high resolutions or to store multiple satellite images of the same land area over many years to calculate changes. We can certainly record audio within the human range of hearing without difficulty but we will rapidly reach beyond production technologies if we decide to capture all insect sounds as well. Basically, the capture of sound, image and text is quite robust wherever there is a real market for it. This covers 99.9% of all needs in the business world, but may only cover 75% of the needs we have in archives and museum documentation projects. For example, OCR is fine for business purposes but almost never adequate for archives or museum documentation.

A similar situation prevails in the arena of tools to manage multimedia data. We can take a wide variety of data objects and mix them together in multimedia productions, but we will have a research project in our hands if we decide to retrieve text only using artificial intelligence techniques, or to manage images in virtual spaces, or to provide sound in dozens of languages with automatic translation. Why? Because the technologies of artificial intelligence, virtual reality and natural language translation are way behind those of multimedia. In addition, if the data objects were made at different places and under different software control, even if they are said to be rep-

resented in a "standard" way, they will often prove to be inaccessible to the data management system.

Finally, if we decide to author the multimedia in linear or branched stories which can be navigated by menu selection, use several windows to illustrate options and current locations, and bring up files of several different modalities of data at once, we will not be on shifting sand. But if we decide to allow users to author their own paths, provide networked connections over wide areas, or even implement the system in a client-server mode, we are getting close to the limits.

Are there some rules of thumb that an institution can use? First, all large database construction projects are very complex, involve lots of dependencies, and cannot be done without step by step planning and sufficiently long lead times. Large projects need to undergo reality checking with time and motion studies and allowances need to

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be built in for vacations, sick time, and even resignations. Each step must be tested in isolation before being integrated with others and all the technology needs to be prototyped. But that doesn't mean that these projects are necessarily research and development. Quite the contrary. The ease of blocking out the tasks that need to be done is a consequence of its having been done by many others.

When we enter the bleeding edge (a place not to be if you have a short time schedule and an expectation to deliver) is when we seek to manage data using techniques which are not tested, or capture more data that off-the-shelf instruments allow, or communicate data at speeds that exceed those of commercial networks. Basically, we are very limited by today's devices, so if you are planning a project that stretches today's capabilities, one way to prevent yourself from encountering the dangerous border of what is doable is to put off the parts that are not quite routine yet until later. This can only be done if the project stretches, as most large projects do, over several years and you can define the architecture and interfaces up front. This way you are waiting for solutions to be delivered to parts of the project while proceeding without delay on other parts. Given a cautious technology forecast and a well framed architecture, this short prevent you from attempting to do things the hard way today which could be quite easy to achieve in the near future.

Large imagebases are not yet routine by any means. But neither are they necessarily risky. You can increase the risk by trying to achieve access methods, resolutions and delivery techniques that are not yet developed and you can reduce the risk by planning modestly and/or staging the project carefully. New software and hardware capabilities are being launched weekly and the general shape of capabilities that have not yet been marketed is well known. Plan to fit in those which fit the standards you have adopted or to use methods within today's commercial capabilities. In this way the archives or museum installation need not become a research project unless you intend for it to be; of course there is no harm in being on the leading edge if that is where you want to be!

D.B.

LETTER TO THE EDITOR

To: The Editor

From: Bil Vernon, Vernon Systems

Re: Review of Standard COLLECTION Cataloguing Module

Thank you for the review published in Vol.6#4 which succinctly describes most of the features in Standard COLLECTION.

Your wrap-up which describes the system as 'seriously flawed' due to the lack of collections management facilities does seem a little unfair as these are outside the

scope of the Cataloguing Module. Although the Cataloguing Module does include facilities for passively recording collections management activities (to allow institutions who need only this level of sophistication to have a comprehensive system at a reasonable cost) it is specifically stated in our brochure that these do not actively manage and control these procedures. Acquisition, Exhibitions, Loans and Conservation Condition & Treatment procedures are in the realm of the complementary Collections Management Module which will be released late 1993 and these will use COLLECTION's unique Procedural Control tool (with enhancements) which you have previously reviewed favourably.

Your comments on performance being slower than other Advanced Revelation systems you have seen is almost certainly due to the greater sophistication of COLLECTION, which extensively uses tools like date, measurements, security, audit, combined indexing, reciprocal updating, referential integrity checking, sorting of internal transactions by date, etc. These do incur a processing overhead, but the few extra seconds are, in our (and our users') opinion, more than compensated for by the additional power and functionality that they deliver.

COLLECTION has been proven to give an acceptable performance on both large networks (up to 20 active COLLECTION users on a network with over 100 workstations) and large databases (over 250,000 object records and many, many thousands of supportive authorities and collections management transactions). Performance is relatively insensitive to both the number of users (provided the network is properly configured) and to the size of the database. The most significant factor is the grunt of the PC running the application, and in this case COLLECTION is probably less greedy than most Windows applications.

The May 11 issue of PC Magazine has reviewed Advanced Revelation in their cover story "Relational Databases" where they say it "may not be the fastest database system you can buy but it's probably the most adaptable". In measuring performance they say: "Advanced Revelation is designed to perform best on large networked applications ... With the exception of Superbase, Version 2, Advanced Revelation was the only database that showed no apparent throughput degradation as we added more workstations during the Random Write test. Additionally, along with several other products tested it also showed no apparent throughput degradation as we added more workstations during the Random Read test." The review concluded that "Advanced Revelation is an exceptional high-end programmable learning curve and is quite expensive. Advanced Revelation is best suited for networked applications using variable-length data, such as human resource, legal, library and museum applications."

We look forward to demonstrating the Collections Management Module to you at MCN 1993.

FUNCTIONAL REQUIREMENTS FOR RECORD KEEPING SYSTEMS

by David Bearman

The University of Pittsburgh is engaged in a study of electronic records management which is intended to develop a framework in which archivists, records managers, auditors, lawyers and others concerned with electronic corporate memory and evidence can implement effective mechanisms to assure adequate record keeping. The study, which will be conducted over three years, began in February 1993 and has already produced some interesting results. In order to place these early findings into context, it is necessary to explain the methodology of the study which is directed by Richard Cox and Jim Williams of the School of Library and Information Science at the University of Pittsburgh and to which I serve as a consultant.

The study will examine how the implementation of mechanisms to satisfy the functional requirements of record keeping are effected by variables in business application arena's, technological settings, and organizational culture. It will do this by studying the reception of proposals to satisfy functional requirements for record keeping by policy, by design, by implementation, and by standards, in four different organizations including private and public, for-profit and not-for-profit. The first step in the study, therefore, was to establish the functional requirements for record keeping.

Bearman and Cox read published and unpublished literature in archives, records management and information systems management to identify issues being raised as problems with either manual or electronic record keeping. They categorized dozens of such reasons and invited a group of experts on electronic records management to meet with them in Pittsburgh this spring to develop a consensus document identifying the functional requirements for record keeping. The draft of that document, which is reprinted here, will be circulated to colleagues throughout the world for refinement before functional specifications and metadata specifications relating to these requirements are developed for presentation to information managers at the four firms.

A schematic representation of the project methodology is presented in figure 1. Following figure 1, the hypothesis advanced by the researchers involved in the study regarding the most likely relationships between variables, are detailed. Following the hypotheses, we have reproduced the draft document on functional requirements of record keeping systems which is being circulated for comment. Please contact Richard Cox, Dept. of Library Science, School of Library and Information Science, University of Pittsburgh, Pittsburgh, PA 15260; 412-624-3245; fax 412-628-7001; or rjc@lis.pitt.edu on Internet with your reactions.

FIGURE 1

<u>Funct. Req.</u>	<u>Tactics</u>	<u>Business Arena</u>	<u>Technical Orientation</u>	<u>Organization Culture</u>
See Below	Policy Design Implement Standards	Finance Personnel Policy etc.	Transaction Data Record etc.	Open/Closed Hierarchical/ Flat etc.

Hypotheses

- 1a) The functional requirements for archival management of electronic records are the same as for traditional records
- 1b) Many functional requirements will not be satisfied by traditional records systems
- 2a) It will be possible to satisfy each of these functional requirements following any of the four tactics
- 2b) Many requirements will be more fully satisfied for electronic record than they could be for paper records
- 3a) Different business applications will share different sets of functional requirements, and
- 3b) Differing degrees of risk are associated with non-satisfaction of requirements in different business applications
- 4a) Different software applications will not dictate different functional requirements, but
- 4b) Different packages within application categories will satisfy the functional requirements to different degrees
- 4c) Software dependent data objects are not records and as evidence will generally be saved in an independent format
- 5a) Functional requirements will be the same for each business sector, and
- 5b) Different sectors will not determine choice of tactics as much as different corporate cultures
- 6a) The best way to satisfy functional requirements will depend heavily on corporate culture
- 6b) The technological capabilities of the archives and its agents will be less critical in satisfying archival requirements that will be the acceptance of archival responsibility by managers throughout the organization.

Functional Requirements for Record Keeping [Draft 5/24; D.B.]

Record keeping is a critical function which is performed through the collective action of individuals and systems throughout all organizations. Record keeping is not the province of archivists, records managers or systems administrators alone, but an essential role of all employees and of individuals in their private lives.

Record keeping systems are information systems which are distinguished by the fact that the information they contain is linked to transactions which they document. Records may be consulted for documentation of those transactions or because they contain information that is useful for some completely separate purpose, but record keeping systems do not just contain data to be reused; they maintain evidence over time.

Record keeping systems support the corporate memory of organizations by supporting business functions of the organization. All business functions require records of business transactions in order to continue their day-to-day operations, satisfy administrative and legal requirements, and maintain accountability. The following functional requirements for record keeping systems define a corporate requirement for any record keeping system, not the application requirements of archives and records management systems. Archives and records management are only one business application within the organization, just as are manufacturing, sales, service delivery or personnel management. In designing and implementing information and record keeping systems, the functional requirements for any particular business applications must be considered together with various corporate functional requirements. Archives and records management systems have functional requirements specific to their business application such as storage management, records retention and scheduling, reference management and access control which are not discussed in this document. The functional requirements presented below, on the other hand, are universal for any record keeping system. They may be of special interest to archivists, records managers, security officers, freedom of information and privacy administrators, auditors, lawyers and others with special obligations towards records, but they should be of value and relevance to program managers at all levels from corporate management to line supervisors.

These functional requirements were specifically developed in order to provide guidance for the management of electronic record keeping systems although they are equally applicable to manual systems. Information systems professionals should note that business functions, business processes, business transactions and business records rather than system functions, system processes, system transactions or system records are the consistent focus of record keeping.

Articulating functional requirements is the first step in effecting adequate control of record keeping systems. The next step is to determine an organizational strategy for satisfying the functional requirement insofar as is appropriate. Strategies might include adopting policies and procedures, designing new systems, implementing systems in a way that supports satisfying the requirement, or developing standards. Each of these four strategies may be applied separately or in combination to each separate functional requirement. The choice of strategy will depend on the degree of risk involved in failure to satisfy a requirement within the business function which the

record keeping systems is to support, the existing systems environment including hardware, software and architecture, and the corporate culture in which the strategy must succeed.

Record keeping systems capture, maintain and access evidence of transactions over time as required by the jurisdiction in which they are implemented and in accordance with common business practices

Figure 2

COMPLIANT		
responsible	ACCOUNTABLE	
	standard	credible
	FUNCTIONAL	
<u>CAPTURE</u>	<u>MAINTAIN</u>	<u>ACCESS</u>
Comprehensive	Sound	Available
Complete	Auditable	Usable
Identifiable	Exportable	Understandable
Authentic	Removable	Redactable

Functional Requirements defined:

I. Compliant Organizations

Organizations should comply with the legal and administrative requirements for record keeping within the jurisdictions in which they operate, including specific documentation, operational, and reporting requirements not referenced below.

II. Accountable Record Keeping Systems

Responsible: Record keeping systems should have policies, assigned responsibilities, and formal methodologies for their management.

Implemented: Record keeping systems should be employed consistently in the normal course of business and should follow procedures which conform to common practices for the industry, business sector and business function.

Reliable: Record keeping systems should control quality characteristics of information being input and process information in a fashion that is consistent and accurate to assure that the records they hold are credible.

III. Functional Records

Comprehensive: Records should be created for all business transactions communicated between two people, between a person and a store of information available to others, and between a source of information and a person.

Complete: Records should accurately capture all information recorded or generated by their creators. Records are linked structural information that contributes to their meaning such as eye-readable conventions conveyed by placement or appearance of the data, permissions or views, or the data model of relations between elements of information within a record. Records are also linked to information about the context of their creation.

Identifiable: Records should be bounded and unique.

Authentic: Records should have provably originated with the purported records creator and/or authorizer.

Sound: Record integrity should be protected over time from accidental or purposive damage or destruction and from any modification after they have been received by anyone other than their creator.

Auditable: Record documentation should trace the processes in which records participated over time, including indexing, classification, filing, viewing, copying, distribution, disposition, migration, transfer, use and destruction.

Exportable: Record content, structural representation and representation of context should be exportable using appropriate data representation standards and standard communications protocols.

Removable: Records should be deletable for those with appropriate authority leaving only audit trails to document their prior existence.

Available: Records should be retrievable and accessible to the system over time.

Usable: Records should be logically reconstructable. Information content, plus any structure and context must be preserved in meaningful and documented relations. For records with functionality, business application procedures must be documented so that they can be correctly associated with the status of the system at the time of record creation.

Understandable: Records should display, print or be abstractly represented as they would have appeared to creators with views and permissions in effect at any time the record was used or be documented sufficiently to determine how the record would have been rendered.

Redactable: Records that should be censored to protect security, confidentiality, property, privacy or other limitations on access should expose only their available content, but retain their full content as evidence for as long as they are retained.

NOTES ON THE USE OF TERMS

The use of terminology in this document is somewhat different from that employed by archivists and other infor-

mation professions, but it is internally consistent, and we consider it important to correctly understanding the implications of each requirement. Usage is as follows:

System: The system for which these functional requirements are being specified is the totality of people, policies, hardware, software and practices surrounding the creation or acquisition and the use of information within any organization.

Application: The application for which these functional requirements are being specified is archiving. It is not any other business applications of the organization, which are presumed to have additional functional requirements.

Approaches to satisfying these requirements: Each of these requirements could be satisfied through either policy, systems design, systems implementation or standards, or through a combination of these approaches. It is assumed that no organization will seek to satisfy all of these requirements with a single approach.

Architecture: Insofar as systems design, implementation and standards are employed to satisfy these requirements, the functionality may be located within the Application Software, in a service located in the Application Program Interface, in any of the services of the Application Platform (such as the operating system, user interface, network services etc.), in the External Environment Interface, in the External Environment itself (for example, in the communications systems or the telecommunications environment). Each individual functional requirement may be satisfied by solutions implemented within one or more software layers and the no two functional requirements need be satisfied in the same way.

Dependencies: It is only possible to satisfy functional requirements relating to storage, preservation and access of evidence as far as those relating to its creation have been satisfied.

Implications: These functional requirements are not completely satisfied within existing paper based information systems on which we have long relied. Some may be easier, and some more difficult to satisfy in electronic information systems. The decision regarding the degree to which any functional requirement will be satisfied is a business decision resting on risk management. Costs and benefits, specific liabilities, and organizational needs and priorities will always be taken into consideration. Decisions not to satisfy functional requirements are just that; they do not invalidate the requirement.

Heuristics: The intention of the research project for which this articulation of functional requirements was undertaken is to examine business functions, software applications and organizational culture variables relating to the satisfaction of these functional requirements in order to develop heuristics that can guide practice.

D.B.

Museum Interactives

Early in 1993, I decided to track notices in trade press to see the degree to which museum interactive multimedia projects are being reported because it was clear to me from recent museum visits that it is a rare major museum these days that does not have at least one interactive operating in some corner. How frequently were these reported, I wondered? Using just a handful of journals, the answer seems to be that they are often written up, but almost never with any critical assessment. Here's a list of what I found. I think it's pretty considerable and would welcome submissions of other notices you find for future issues.

Beit Hashoah Museum of Tolerance

"Beit Hashoah Museum of Tolerance" **MuseumMedia**, vol 3 #3, May/June 1993 p.4-6

California Museum of Science & Industry in Los Angeles

"Exhibit uses interactive video to teach kids about our Urban Environment" **Multimedia & Videodisc Monitor** vol.11#2 (February 1993) p.7

Exploratorium

"High Tech Sandbox" about 'Terraforms: Duet for Sandbox and Computer' **New Media** vol.3#8 (August 1993) p.33

Fleet Space Theatre in San Diego

"The Beat Goes On" exhibit on the human heart - contracted by American Heart Association. Developed by Haukom Associated of SF **Exhibit Builder**, vol10#5, May/June 1993 p.38-40

Gateway to the Past Museum, Abiquiu New Mexico

New "Hupobi Heritage" an interactive exhibit, **New Media**, Vol.3#5, May 1993, p.27

Houston Space Center

"Visitors to Space Center go on interactive 'Shuttle Orientation'" **Multimedia & Videodisc Monitor** vol.11#3 (March 1993) p.11

J.Paul Getty Museum

"Illuminating Interaction at the Getty" by Kandy Arnold, **New Media** vol.3#3 (March 1993), p.28

Kingman Museum of Natural History, Battle Creek MI

"The Beat Goes On" exhibit on the human heart - contracted by American Heart Association. Developed by Haukom Associated of SF, **Exhibit Builder**, vol10#5, May/June 1993 p.38-40

Liberty Science Center

"Liberty Science Center Reflects Diverse exhibit Concepts" includes notes on interactive ecology theatre by Peace River Films

Interactive Update vol.5#13 p.1-2

Minneapolis Institute of Arts

"MN Institute's Japanese Art Disc", **Multimedia and Videodisc Monitor** vol.11 #4, April 1993 p.5

"Silver to Silica" a History of Photography, **New Media** vol.3#1 January 1993 p.30

Museum of Science & Industry Chicago

"The Beat Goes On" exhibit on the human heart - contracted by American Heart Association. Developed by Haukom Associated of SF, **Exhibit Builder**, vol10#5, May/June 1993 p.38-40

Museum of Tolerance, CA

"Multimedia Confronts Hate" an interactive, **New Media**, vol.3#6, June 1993 p.34-35

National Gallery of Art

"National Gallery of Art Releases "American Art" Videodisc, Demonstrates commitment to Digital Technology", **Multimedia & Videodisc Monitor** vol.11#6, June 1993, p.5

"National Gallery's Greek Miracle Exhibit Aided by Perseus", **Multimedia & Videodisc Monitor** vol. 11 #1 Jan. 1993 p.5

N.J.State Trooper Museum (Trenton)

"911 Simulation", **New Media** vol.3#1 Jan.93, p.29

Smithsonian Institution

"The Beat Goes On" exhibit on the human heart - contracted by American Heart Association. Developed by Haukom Associated of SF, **Exhibit Builder**, vol10#5, May/June 1993 p.38-40

St. Louis Zoo

"Explore Mississippi Streams, **New Media** vol.2 #12 p.23

San Diego Zoo

"San Diego Zoo Presents . . . The Animals", **Multimedia & Videodisc Monitor** vol.10#12 p.13 (also available as a CD-ROM \$119.95 from TST, 60 Leveroni Court, Novato CA 94949)

United States Holocaust Memorial Museum

"Making Multimedia Work", **Washington Business**, June 14, 1993 p.19,26

"Wexner Learning Center - United States Holocaust Memorial Museum", **MuseumMedia**, vol 3 #3, May/June 1993 p.2-4

"Multimedia Confronts Hate" an interactive, **New Media**, vol.3#6, June 1993 p.34-35

"U.S.Holocaust Museum Prototype", **Multimedia & Videodisc Monitor**, vol.10#11 (Nov. 1992) p.10

D.B.

CONFERENCES

Ontario Archives Association 1993 Conference: Archives and Automation

It sounded like a good idea and it attracted a much bigger registration than this provincial association of archivists was used to, but the OAA meeting was a disappointment to me and left me very concerned about the state of archival automation and of knowledge about it among archivists. I hope my keynote address, to be published in the summer/fall issue of *Archivaria*, was understood because it represents an important step in my own synthesis of archival and information science issues, but I rather doubt that the message came across. I tried to focus attention on the record system as the locus of provenance (not the organization or the series) and demonstrate how documentation of record systems supported the functional requirement for archivally sound record systems which I had drafted for the University of Pittsburgh research project. I was followed by two and a half days typically with two parallel sessions.

The session I attended on "automation and our sibling professions" with presentations by museum, library and community information specialists flirted with mis-information. That on automation and records management was valiantly delivered to an audience that knew nothing about either. The session on reference and automation saw Michael Moir of the Toronto Harbor Commission and Maggie MacLelland of the National Archives of Canada try to explain their difficult choices in a complex process of delivering end-user information inexpensively, but the audience asked about the life of optical discs, the difference between full-text retrieval and fielded data files, and the cost of hardware platforms. The concluding session entitled adventures in automation featured six Ontario archivists presenting case studies of their limited experiences with software selected without evaluation criteria or formal requirements. Like many novices they all loved whatever system they had, although most described situations in which the particular product they had was ill suited to the critical success factors of the application they described.

The meeting was saved, for me, by a thoughtful plenary address from Ian Wilson, Archivist of Ontario and until recently Director-General of Information Resources Management for the province. Ian began by noting that archivists should be delighted to see the society at large debating issues about documentary evidence which have historically preoccupied archivists. He identified the profound social changes brought on by the information revolution as responsible for this in an age in which knowledge is now the most important ingredient in wealth and stressed the need for information policy in such a society to assure equitable distribution of opportunity and promote the growth of community resources.

Ian then pointed out that Ontario information policy has been uncoordinated, and although information technology was planned, the actual content of information was under valued. Symptomatic of information being treated as a bi-product rather than a resource is an environment where government publications are free, access is discretionary, and information systems development was decentralized. He looked forward to a time soon, with the new emphasis on information as a resource, that access would be considered a right, government information would be sold to assure that it could be made available more widely, and a coordinated approach would be taken to systems development. In such a world Ian speculated the archives would be considered a capital asset, a guide to information holdings compiled by the archives would be a marketing tool, the 1400 public libraries in Ontario would be strategic information access points, and the public would start to demand to be involved in decisions made by archivists about disposition of records.

While it was evident afterwards that such a vision, particularly the involvement of the public in disposition which I urged as a means of removing archivists from scheduling and identifying constituencies for records, was far from acceptable to most of the audience, Ian continued what I hope I began, in urging the continued re-invention of archives and a "permanent revolution", as Lenin would have it, in the conditions of production of evidence.

Just as I loved Ian's big picture, it was clear that the provincial association was indeed too provincial to accept radical change on these terms. I left distressed to think of how soon the activities in which they are engaged will be irrelevant to the constituents they must serve and wondering how archival leadership can begin to convey the amount of information about the electronic age that it will be necessary for archivists to know if we are to survive into the next century as a viable profession.

The meeting attracted four automation vendors active in Ontario whom we wouldn't normally see in the US. These were In-Magic (a U.S. firm that is doing very well in the Toronto area among archivists), Eloquent Systems Inc. a Vancouver firm whose GenCat software has done substantially less well but is being promoted by Bizware, an important records management consulting firm in Ontario, Bell & Howell which showed their document scanning and indexing systems for business applications, and Commonwealth Historic Resource Management Ltd. which showed Visual Archiver, a peculiar image catalog package which has ten fixed fields, permits only four collections to be recorded in unlinked files, and has low level image processing features but which seems to sell to museums and archives with 386PC's, a few images and C\$499. Its hard to say why.

D.B.

AAM Annual Conference

The American Association of Museums Annual Conference in Fort Worth was virtually bereft of any computer content except for two informal sessions sponsored by MCN on Sunday before the meeting actually began and the exhibits. I attended only these, and the MUSE Awards luncheon where the first ever awards from AAM for interactive multimedia were given. Except for vendors demonstrating their wares, few museum computing professionals were in evidence.

The two sessions on Sunday were held in one of the conference hotels rather than in the convention center where all regular sessions took place and began before attendees had an opportunity to register for the conference and hence before they could know where the session was taking place. Nevertheless about 40 attendees managed to find a session on "Getting Connected" which addressed Internet and the opportunities it presents to museums. A handful came in mid-afternoon to hear a report on the CIMI Initiative and its recently completed Standards Framework for CIMI. About thirty-five MCN members and guests returned in the evening for pleasant MCN sponsored cocktail party/reception on the hotel terrace. Nevertheless, one had to ask whether MCN was really well served by the AAM meeting organizers who managed to approve a program with more than 100 sessions, of which only about four even had a single speaker discussing automation issues. Unless MCN makes different arrangements with AAM in the future, I think I'll skip the conference altogether.

Not that the Media and Technology Committee didn't try. Its "Marketplace" or informal afternoon of demonstrations and discussions included Milan Hughston on Librarians as information managers, the Canadian Heritage Information Network presenting its latest projects, a new Videodisc from the National Gallery of Art and a discussion of High Definition Television.

The Committee's MUSE Awards luncheon honored recipients of the first ever prizes for interactive multimedia. First prize went to the Royal Ontario Museum for its program "Birdsong/le chant des oiseaux" a rich database of sounds and explanations of how and why birds make them, what birds live where and how the technology represents sound waves using an oscilloscope. Second prize went to "Land the Shuttle" a thrilling experience in flying it yourself from the Space Center at Houston. Third prize went to "Art Inside Out: Exploring Art and Culture Through Time" from the Art Institute of Chicago which examined a small number of items in the collection which could be made of special interest to children and gave visitors an opportunity to play a number of games while learning about the art and the societies which created it.

The exhibits reflected a year of slowing development in which most software firms exhibiting were returnees and the software they were demonstrating was little changed,

or modestly improved, over prior years. I consider it a year in which vendors seemed to discover the value of their installed customer base and were engaged in improving the existing product incrementally to better suit customer needs rather than introducing major renovations and new product lines. Details of vendors and their products appear in the "software" section of this issue.

ASA Annual Conference

Australian Society of Archivists, 1993 National Conference, "Responsible Record-Keeping: Future Directions in Accountability", June 18-19, 1993, Melbourne Victoria

The organizers of this year's ASA Conference chose a theme mirrored in the current issue of *Archives & Manuscripts* and of considerable timeliness in Australian public debate: accountability. As Paul Brunton, ASA President, noted in opening the meeting, archivists are not currently imagined by the public as bastions of democracy, but their challenge is to change this. As he quipped, the title of the conference could have been Responsible Record-Keeping: "past imperfect, future indefinite".

The lead speaker Sir Edward Woodward, confirmed the public confusion about the role of archivists by speaking at length on the sadness he feels over the destruction of some personal letters written during World War II from his father to his mother and asserting immediately afterwards that he saw no reason to retain the drafts and uncited evidence used by various Royal Commissions and Boards of Inquiry on which he had served (he was involved in 18) after they all published the products of their investigations.

The keynote address delivered immediately following Sir Edward by ASA Honorary Member Bob Sharman, attempted to explain just why the documents presented to Royal Commissions were of interest by giving an account of the Royal Commission which investigated the Western Australia State Government in 1987-88. Time after time the Royal Commission found that no records were being made, none being kept or none could be "found" around events it had decided to examine. Yet, as Sharman says: "It was ironical indeed that a Royal Commission which had stated that one of its greatest problems lay in the unavailability of public records to document activities in the state in the 1980s should, almost immediately on presenting its report, insist that many of the records it had compiled should be discarded without reference to State Archives."

Because the opposition was able to round up sufficient votes to amend the list of documents which were referred to the State Archives, it is possible today to see that significant evidence would indeed have been lost. Although the same opposition party is in power, it has not yet implemented the second recommendation of the Royal Commission report which called for a separate and independent archives authority, under provisions of legislation that would: 1) ..."contain a broad definition of a

public record..." 2) ..."affirm public ownership of public records" 3) ..."require the archives authority to set standards in record creation, maintenance and retention..." with emphasis on creation 4) ..."empower the authority to inspect..." 5) ..."establish disciplinary offenses for officials who fail to comply..."

In considerable understatement, and an excellent lead-in to the rest of the conference, Sharman declared "there is a real problem about the nature and scope of archives and about the significance of the archivist's work". He ended by considering how archivists might take a role in assuring that records are created and retained.

The second session of the morning, introduced by Sigrid McCausland and the final session of the day introduced by Peter Crush, were both great disappointments because they revealed that one of our favored user communities, historians, were as confused about the nature and purpose of archives as senior public servants such as Sir Edward Woodward. In the second session, Don Garden took the view that the role of historians is the reconstruction of texts, suggesting that few records will be required, and these will be subjected to in depth study. Andrew Markus, on the other hand, saw himself as a traditional historian who used lots of records, while touting a research method based on serendipity. Marianne Quartly showed the conference redacted copies of records she had seen in full under the preposterous illusion that she was protecting privacy. In the fourth session, two "public historians", Mary Sheehan and Kate Gray, suggested that they work in using records for public advocacy was very important to society and should be assisted by archivists and bemoaned the fate of records of many privatized "public" activities in recent years. With friends like these, who needs enemies?

Unfortunately the third session speaker, John Barry Chief Legal Officer of the Victorian Land Titles Office was asked to speak on EDI about the technology of which he apparently understood little yet was willing to expound at length. He invoked numerous security concerns that in his view should keep EDI from occurring, but he based his fears on mis-information which it is best not to repeat. The next lawyer up, Kristin Leece, had a more sensible position. She noted that many of her clients use EDI and is sure it will become the way to do business. She advises her clients to consider the needs of the business for records independent of their form and then helps them design systems that will provide identity, auditability and access to electronic records as evidence. While she admits that the current Australian laws of evidence are weighed strongly against electronic records, she felt that admissibility will ultimately resolve into an issue of reliability. In this regard she cited seven criteria applied to admissibility in South Australia which she believed would ultimately guide others: the programming was correct, there was exclusive reliance on the system to conduct business, no reasonable cause exists to suspect the data, the computers worked, no alterations were made to the logical mechanisms, appropriate security was in place, and responsibility for the system was assigned. She expressed

concern that without more uniformity in its laws about electronic evidence, Australia could become a haven for computer crime.

On the second day of the Conference lawyers and historians were joined by technologists and journalists, and all the speakers did rather better (if far from brilliantly) at understanding archives. The opening talk by Ken Wilshire, Barrister and Solicitor of the Superior Court of Victoria, addressed electronic entrepreneurial crime. His thesis was that complexity is the primary weapon of the entrepreneurial criminal, and that electronic means of conducting crimes increase complexity. A secondary thesis was that complexity is also the source of the downfall of most criminal efforts because the perpetrators must make written records to keep track of how they are conducting these tremendously complex scams. The information glut, with its lengthy legal documents consisting of hundreds of hand crafted clauses, both serves and undermines such criminal efforts. It is not unusual today for prosecutors to get, in their first search warrant, access to electronic databases. They must understand the deliberative process because intention above all else is what is illegal. And understanding intention requires records of drafts and tentative schemes.

Wolfgang Effenberg of Latrobe University followed with an explanation of why archivists (along with managers of organizations employing electronic records) need to require business functional managers to use time referenced databases. The decision support databases which he is currently designing embody time referencing because without it they cannot answer questions about what a situation was like previously and how it came to look like it does today. In his systems data cannot be erased, only added to with new data which also carries its time of creation. This way the system can also be proactive based on today's situation; an instruction could state, for instance, that if the road surface roughness today is 1.0, the system should send out a road crew when any new reading exceeds 1.3. Effenberg then discussed some of the problems involved in separating logical and physical records, representing knowledge in a way that can be carried across system migrations, and identifying what I would call business transactions. He ended by stating that "unambiguous time referencing is critical for evidence" which is as close to an archival statement as any of our colleagues from other professions came.

Stuart Littlemore, an Australian television journalist with a long and distinguished career in law who has established himself as the "conscience of the media" down-under, followed with a very different, but equally useful talk. Taking his cue from the media issue which had dominated Australian TV and Press for the previous two weeks, a High Court decision in a case of aboriginal land rights, he pointed out that no press coverage recorded the decision itself in the first 24 hours, nor up to that time had they published any texts of the decisions themselves. He likened the news about news approach taken (complete with its oft-times misleading and sometimes wrong accounts) to "re-enactments of news which has become a

avored means of TV journalism or of falsification. He concluded by emphasizing how little journalists are supporting reliable sources both by barely recognizing those they could and hiding behind many whom they have decided to protect.

Phillip Reynolds, a lawyer trained also in archives, gave an account of discovery proceedings in Australia, oddly enough illustrated by the movie "Class Action", a U.S. based fiction in which the party that tries to withhold evidence gets its comeuppance.

Finally Roger Crowe of the Ombudsman's Office in the State of Victoria spoke of the importance which the ombudsman places on records and the frequency with which they cite inadequacy of record keeping procedures in their findings although they have no ability to redress these inadequacies. Often complaints come to the ombudsman because access to documents under FOI is denied by agencies claiming the document cannot be located. Crowe was able to report that his office typically finds these documents after a little more searching.

As the final speaker it was my task to offer a summation of the Conference, but since there were no concurrent sessions and the whole audience had been present through almost all the proceedings, I offered more interpretation than recapitulation. I pointed out how serious it was to our longterm success that the very professions upon which we needed to rely and should be able to count on for support had such an inadequate understanding of the role of archives in accountability. Particularly troublesome was their focus on records as final products rather than process documentation. I suggested the benefits to the profession of introducing into public debate the functional requirements of record keeping systems (see p.###) and the emphasis which Bob Sharman rightly placed on creation of a record, especially in electronic environments. I urged the profession to begin to measure outcomes rather than outputs; accountability brought about through archival intervention rather than numbers of cubic metres of records stored or accessed. And I recommended, extending Wolfgang Effenberg's contributions, that our focus be on business transactions. Picking up on some ideas of the need for standards in a changing society introduced by Stuart Littlemore and of the possibility of codes of Best Practices serving as guidelines in public administration which was mentioned by Roger Crowe, I urged archivists to re-invent the work of archives, substituting such cultural advocacy and control through others exercising control for regulation by minutiae and control through taking archival custody.

In retrospect the 250 plus members of the ASA who gathered in Melbourne demonstrated by their numbers and intense concern for accountability mechanisms that archival science is very alive in the antipodes. They recognize much more than their colleagues in North America that archives and records management are inextricably linked, that archives is an administrative rather than historical discipline, and that the electronic age will force archivists into intervening in the creation of records, not just

their care. I found the willingness of participants to consider change and the recognition that it would be necessary highly refreshing, not just at the ASA conference, but in several other workshops ranging from one day to two weeks in duration which I conducted on electronic records management during my visit to Australia.

D.B.

NAGARA

The 1993 NAGARA meeting in St. Paul Minnesota July 20-24, 1993 disappointed its sponsors by a low turn-out that may be related to the tight budgets in state governments, but it rewarded its attendees with a program rich in electronic records related workshops, program sessions and committee meetings. Half of the entire program was directly related to electronic records matters, reflecting the impact over the past five years of the NAGARA "Camp Pitt" workshops on electronic records and strategic planning and the focus of the program committee chaired by Gerald Handfield Jr. (Indiana) and especially the hard work of committee member Lisa Weber of the NHPRC.

A two day workshop on Managing Electronic Records, presented by Nancy McGovern and Margaret Adams (NARA) and Alan Kolowitz (NYSARA) preceded the conference. While I didn't attend, it was reported that the 20 participants were engaged and presumably emerged better trained.

The NAGARA meeting opened with a brunch at which the keynote speaker, Don Gemberling of the Minnesota Information Policy Office addressed "Data Privacy and Public Records". Gemberling did not suggest how to bridge the tensions between openness of public records and the confidentiality implied by privacy, although he found much to praise in the (as yet unimplemented) adoption by Wisconsin of the European model of a privacy ombudsperson to help individuals secure their privacy rights. He did not suggest any practical methods for preventing secondary use (use of data for other than the purpose for which it was collected) in the face of increasing pressures for efficiency and information sharing.

At the following session on Geographic Information Systems, forest health specialist Tom Eiber explained how he, as an end user, uses GIS in the daily work of planning the fight against forest disease. He explained why, given there were 17,000 1/4 quadrants in the state of Minnesota and 55MB of NASA photographic data for each 1/4 quadrant, to say nothing of the other data, the system that they use is distributed and the issues are they face are defining standards, developing a catalog or directory, and supporting remote access methods. In all the Minnesota Land Management Information Center provides distributed access to over 100,000 data files and 500 active users. They, and Eiber's co-speaker Les Maki, are actively involved with the Federal Geographic Data Committee created by OMB circular A16 in 1990.

The second speaker, Theodore Hull of NARA was substituting for Ken Thibideau, reported huge increases in Federal expenditures for GIS on the horizon along with the full implementation of the Spatial Data Transfer Standard (SDTS) in January of 1994. He noted also that the revised draft standard for spatial metadata content will be proposed next month. NARA has been attending each of these and other standards developments and has completed its first appraisal of a GIS run by the Bonneville Power Authority (BPA). Oddly, NARA decided to acquire only those data layers created by the BPA and leave data acquired by the BPA behind. The result is likely to be that BPA geographic evidence will not be reconstructable since the data from other agencies will not necessarily be available and even if it was would not be reconstructable the way it actually looked and was linked in the BPA system. Furthermore, since NARA does not have GIS capability in house and it was unclear to me whether they were actually planning to accession these records especially since there is no on-line access to records from the Center for Electronic Records and the whole point of GIS systems is visualization.

In the afternoon, Ed Bridges (Alabama) and Tom Mills (New York) teamed up to report on their findings as Bentley fellows about Information Policy. They found that most states had numerous legal definitions of records which were embedded in three types of acts: Documentation laws, Access laws, and Retention laws. Documentation laws, could be said to be 'function-based', Access laws were 'rights-based' and Retention laws were 'material, or ownership-based'. Each was further modified by a common law tradition about what constitutes a record and by the rules of evidence established by courts. Based on the finding that there were so many divergent definitions of records within each state, Bridges and Mills are proposing a framework for records policy an approach they hope will:

- 1) foster creation of adequate records for accountability
- 2) promote adherence to record keeping system standards
- 3) provide access to information about records through such mechanisms as a directory, IRDS or clearinghouse
- 4) identify records of continuing value and provide access to them

The final session of the day was devoted to electronic court records, which are an increasingly large and complex domain for electronic record keeping systems. Unfortunately the speakers addressed the topic as if they were simply dealing with another traditional records management problem and gave little insight into the specific issues raised by electronic records.

On the morning of the second day, twenty-five pre-registered participants joined an "Electronic Records Program Development Roundtable". The organizers reported that over half the NAGARA membership had asked to come to the session but that they had retained the fixed limit on number of attendees to encourage discussion.

Whether that was necessary or not, it was a very useful session.

Margaret Hedstrom (NY) first reported on the Joint Meeting of the NAGARA Committee on Information Technology (CIT) and the SAA Committee on Automated Records and Techniques (CART) which had taken place in April. She noted that the background papers of the meeting and a summary of its outcomes would be published, along with other papers and an annotated bibliography in a forthcoming Archives and Museum Informatics Technical Report (#18, August 1993). The fundamental conclusions of the session was that traditional methods, lack of technological skills and the perception others have of archivists were barriers to program success, but that openness to changing our methods and willingness to risk high visibility re-engineering initiatives could overcome these barriers. Ideas for restructuring programs that were proposed are reported in the papers of the meeting. Hedstrom then invited representatives from each of the States present in the room to make brief comments about their electronic records programs.

Roy Turnbaugh explained how their presence on the State Information Systems Advisory Committee was helping to raise their profile. They recently held meetings with records managers and IRM staff on how to deal with the increasingly distributed computing environment and conducted a database survey in conjunction with the IT office which was published in both paper and electronic format. While no single individual or program within the archives is responsible for electronic records, there is a technical person on Roy's staff who plays the largest role as liaison.

David Olson (NC) reported that they had just received an increase of \$100,000 to hire two staff members to take a "systems approach" electronic records. Planning for this new program has already led them to revise the paper record scheduling process and he expects other changes to be suggested by it. They will not set up a separate program for electronic records but rather take an integrated approach. They expect to work through the Advisory Committee on Electronic Records, a State IRM function, to develop standards and plans. A major task for the new program will be to educate the existing staff.

Following his report on the State Program, David Olson also reported on the Pittsburgh Institute of 1993 which was attended by the largest group yet, 30 people. Olson felt that much useful group work was generated including a job description for an electronic records specialist, a report on signature verification and a statement on accountable government, citizenship and democracy in an electronic environment. He reported that 1994 would be the final year of the Institute which was considered to have been a great success, invited everyone who had attended any years in the past to come in 1994, and identified the follow-up for subsequent years as one issue that would be considered at the meeting.

Ed Bridges and Deborah Skaggs (AL) then reported on their involvement in the State Information Advisory Committee and its sub-committees as well as on the April conference reported next in this issue of A&M. One opportunity that has come their way is that following the conviction of their governor on ethics charges and his removal from office, they needed to save records from an IBM System 36 used by his office. They have also scheduled electronic records in a department in which they feel that paper records are under control. In addition they have developed optical disk guidelines and are beginning to think about their methods, which they expect will be fundamentally different next year.

Gregory Sanford (VT) reported that they were using a functional analysis of State government prepared by some outside consultants as a framework for identifying significant records. The archives invited itself to a number of meetings on information policy, was subsequently appointed a member, and succeeded in adding numerous questions about record keeping practices to a recent Statewide survey, the results of which then lent substance to the archives concerns. They have since identified key records creators in each functional area and are building the functional requirements into specifications. Sanford noted that the thrust in Vermont is to pool data between agencies and that now that archives is a partner they are working to figure out how to solve the problems this creates for record keeping.

Frank Evans (NARA) saw the current Center for Electronic Records as the kind of response NARA makes to take the heat off a boiling issue but that it is not substantively changing NARA processes. For example it is effectively appraising series by series rather than looking at functions and did not have the courage to challenge the NAPA study which, like all studies by end users, identified lots of records which they thought were too important to lose. The same problem will doubtless occur when the NRC study of scientific data is submitted. He did suggest however that the CER is making some departures in hiring new staff with strong IT backgrounds and betting that they can be trained in archives easier than archivists can be trained in technology.

Marie Allen (NARA) reported on a joint project between NARA, four States and the Food Stamp program to look at the electronic record keeping requirements of the Food Stamp program and make appropriate changes in the instructions for both paper and electronic records retention.

Peter Gottlieb (WI) reported that the privacy issue has indeed been a major force shaping information policy debate in Wisconsin and that the archives became involved with implications for electronic records management. They are currently involved with the IT function in an "information archiving" trial involving three state agencies that will receive broad publicity within State government. The appraisals are function based rather than based on a database survey, which is a radical change from their

current paper records practices. He is looking to add short term funded staff to the project.

Mike Miller (EPA) has been conducting a policy review of all information policies at the EPA to identify what policy guidance is needed to assure that electronic records are considered records in all circumstances. The internal survey that EPA conducts to conform to the requirements of OMB Circular A130 for an inventory of systems has been amended by his office to include a question about retention policies and practices. They have developed general records schedules for particular types of systems such as bibliographic systems, indexing systems, computer models etc. They see a real opportunity for records management as a result of the spread of local area networks because it has raised the awareness of managers to the needs to manage electronic communications, especially e-mail. In addition, the records management function is about to be merged with the data management function which Mike hopes will give them a new profile and personnel with useful technical skills.

Richard Belding (KY) noted that for the first time all State agencies in Kentucky, including the eight State funded universities, participated in the biennial automation planning cycle that corresponds to the biennial legislative session. Five archives staff members were involved in reviewing these plans over a five month period to identify new applications. The archives staff are involved in several information policy advisory committees and attribute a great deal of their success and influence in the State to the personal relations they have established through these contacts. They are using Internet to share information locator data, and now that the State information systems agency has ceased to support its data dictionary, the archives is in the pre-eminent position. A major reorganization of government that is currently under consideration may involve the creation of an information cabinet in which archives would play a role. Among the project that are taking staff time is the "Common client datafile" project in human resources which received funding from the Pew Charitable Trust. In addition, like Alabama, they have profited by scandal and are getting a lot of attention from State legislators due to the conviction of a number of State legislators on criminal charges in the past two years.

While the meeting could have usefully continued for several hours more, there was only time for a few brief comments from Laura McGee (Dallas) regarding the need of local governments for assistance in establishing functional electronic records programs, and some closing words from the chair, Tom Mills, who reminded participants of the program of the CIT for the coming year, which includes another joint meeting with the SAA CART and probably the sharing of a listserv with that committee.

In the second session of the morning, Michael Fox and David Klaussen had the assignment of reviewing the RLG AMIS system and Mark Hammond's Enlighten system respectively. Since both systems are gleams in the eyes of

their developers they should have refrained. Michael Fox did, and devoted his discussion to the benefits of off-the-shelf groupware but David Klaussen and Mark Hammond illustrated the difficulty of saying anything intelligent about vaporware by trying to describe the virtues of their non-existent system. Commentator Marion Matters, whose paper was read by chairperson Lisa Weber, used the opportunity to reflect on why archives aren't able to command a market to create applications specific to their needs and how they might use generic commercial products for most of their functions which are no different than those of many other kinds of organizations.

The next session returned to the present with a session on the Internet. Julia Wallace, Government Information Librarian at the University of Minnesota elucidated some of the principles of the depository library system which have continuing relevance in the electronic age and identified other policy issues peculiar to the electronic environment. She then discussed the varieties of resources on the Internet and the ways to use them. She called attention to the June 23, 1993 revision of OMB Circular A130 which takes the integration of electronic sources seriously and noted that finally the Federal Information Locator System concept might take off. Eileen McCormick of the Minnesota Information Policy Office discussed standards on the network and their relevance to users, in particular the x.500 Directory Services standard and ODA. Charles Dolar, NARA (standing in for Avra Michelson) argued that the Internet was important to archivists because: 1) it could transform reference and access, 2) others will use it to communicate records, 3) the information infrastructure community will archive information with or without help from archivists, 4) the information infrastructure is politically central to this administration, and 5) public policy about information and records will be made in the coming years with reference to the Internet. He reported that NARA will establish full Internet access for all staff by November 1993 and is exploring now how to introduce organizational change by using the Internet resource, including making archival finding aids available, developing information locator systems and supporting R&D. He closed by describing the National Environmental Library Metadata Project which is examining the concept of evidence in the recording of global change data and remarked that technology is and will continue to drive archival practice.

At lunch, Jeff Buller of Microsoft Corporation entertained the audience with a self-serving history of the company and a look into the future which Microsoft would like to consist of "information at your fingertips", pretentiously called IAYF. In Microsoft's ideal future, IAYF will be available in a wide range of consumer devices that will supplant the separate telephone, fax machines, copiers, computers, televisions, pagers and similar devices we have today making the profits they make on Windows look like spare change. And while they have a pretty good chance of succeeding by the year 2000, Buller told us very little of that would explain why.

At the final session of the day, and the last session of the conference devoted to electronic records issues, I presented the functional requirements for record keeping systems (see lead article) and a technical framework for applying these requirements to the management of electronic mail. The technical framework involves realizing that the whole system will conform to a requirement if it is satisfied in some location within the system for each communicated transaction, so different functional requirements may be satisfied in distinct ways. The next step is to identify all the interfaces - between software layers and between hardware components - in which one might locate a person, device or instruction which could satisfy the desired requirement. Finally by reference to the business application, the organizational culture and the technical environment one selects a strategy for satisfying the requirement that will be most likely to succeed in that environment. I illustrated the strategy with electronic mail, but it is applicable in general to electronic records management.

My talk was followed by Anne Gilliland-Swetland who spoke on the potential of computer-mediated-communications (CMC). She cited numerous authorities and reasons to believe that CMC will be important and explained some research being conducted by herself and colleagues at the University of Michigan in the appraisal of CMC records. Dan Moore, National Archives of Canada, concluded by reading the paper of an unnamed colleague regarding the records of the Trade Negotiations Office which NAC inherited following the conclusion of the 1989 Free Trade agreement with the U.S. These were unstructured text files from electronic mail and word processing files. About 5% of the records turned out to be about substantive matters in the trade negotiations with many more administrative, procedural and social. It was found that these 5% were not replicated in the paper records and did contribute to understanding the context. The conclusions seemed to be that archivists could work fine without being involved in the up front design of systems but by this time I was so confused by the way the paper was written or presented or both that I am not sure it really meant to say that.

It is unfortunate that NAGARA attracted so few participants because it was a good forum for those interested in electronic records this year. If NAGARA continues to focus on the harder technical issues it will soon become a locale at which public sector archivists will find more useful advice than they do by coming to SAA meetings. On the other hand, very little of the content of the electronic records topics at the meeting was directly related to government archives, so it could happen elsewhere too. Perhaps the best idea I heard was that given the small size of its meetings, NAGARA should meet with NASIRE, the organization representing State information systems staffs. Both groups have different agendas but they also share enough to make an overlap day or day and a half very exciting.

ARCHIVES & STATE INFORMATION POLICY

A conference in Montgomery Alabama in April 1993, organized by the Data Systems Management Office and the State Archives, brought information systems personnel from throughout Alabama State government into a full day discussion on electronic records management. The meeting was opened by DSM Director, Dr. John Parsa who spoke on the evolving culture of information systems in Alabama, including their growing interdependence and the role of IT as a support function for organizational missions.

In the first session, David Bearman discussed the opportunities for "re-inventing" state government through use of information technologies and the challenges of managing electronic records to provide accountability. A panel discussion of managers from the Education, Treasurer's Office, Economy and Community Affairs, Medicaid, Mental Health and Human Resources Departments then responded to a provocative question posed by moderator Ben Barnes (Alabama Super Computer Network) who asked: "If you could make one single change in your agency to meet these challenges, what would it be?" The discussion identified ways of achieving government objectives by providing data to the private sector and interest groups, measuring achievement by service rather than counting lines of code and hours, confining planning so that planning cycles don't extend beyond "cycles of opportunity", and other methods of creatively redefining problems in order to solve them.

The second speaker, Stephen Dooley, Commissioner of the Kentucky Information Systems Commission (KISC), spoke about the history and methods of the Commission which is responsible for architecture, standards and long-range planning and has employed strategies of networking, leveraging resources and procurement management. Issues being addressed by KISC today include open records policies, extending a backbone network to every school in the state and developing an integrated service delivery model (single window) for state government.

The third speaker, Margaret Hedstrom of the New York State Archives reviewed the ways in which the NY State Forum for Information Resource Management, a five year old public interest lobbying group has been used to create a voice for such important initiatives as a state information locator system, telecommunications policy, and an information technology research center. She went on to explain how the State Archives has changed its methods from issuing regulations to promoting good practices where it finds them and publicizing them to other agencies and gave examples of agencies in which data administration, good policies and systematic risk analysis have contributed to electronic records management success.

A panel discussion of information managers followed the presentations by Dooley and Hedstrom. It identified problems faced by IT managers including how to break away from previous modes of service into a customer oriented mode and how to escape from regulating to measuring real outcomes. Examples of successes from individual agencies in establishment of EDI standards and development of ANSI standards for all aspects of motor vehicle licensing and accident reporting were explored. The interconnections between systems became apparent to all when the relationship between vehicle registration, voter registration and child support enforcement (a major objective of welfare) was discussed.

In the day of workshops which followed for some of the participants, Bearman and Hedstrom developed ways in which an understanding of the functional requirements for record keeping systems and the architecture of software and of hardware configurations could be exploited to develop tactics to manage electronic records for archival, auditing, security and vital records purposes.

NOTED IN PASSING: MUSEUM OF VICTORIA INTERACTIVES

Mathew Nickson is the Photographic Archives Project Officer for the Museum of Victoria, Swanston St., Melbourne which is asking local people to bring their family pictures (pre-1960) in to the museum for copying and cataloging as part of the "largest Australian Family Photo Album". Photographs are then made available to researchers on videodisc. Some excellent examples grace a small exhibit set up to attract more contributors which shows rotating images from new accessions.

The Museum of Victoria has installed an interactive multimedia production entitled "Nature's Store" appearing as part of an exhibit entitled "Keeping Culture Strong" which features two branches (plants and animals) accessed by touch screen. Ten plants and seven animals of South Eastern Australia are shown in thumbnails to be selected. At each selection, from one to four additional views beyond the typical paragraph of explanation and main photograph are available showing such features as the uses of the parts, how the plant or animal is prepared by aborigines for eating, and the natural distribution/habitat. A "BACK" button is always available but because there is no recycle or attract mode, users often started on a lower level screen and did not know that back would take them to a higher level. Sometimes text is highlighted, signalling hypertext to a glossary for those in the know, but no users I observed knew what to do with the highlights and therefore noone travelled to the lookups. Rating: 6 in 10. Simple, only partially successful due to mediocre technical realisation and inadequate help, well integrated into the theme and the material of the exhibit.

D.B.

CALENDAR

August 25-27, 1993 Washington, DC; Washington Interactive Multimedia '93: Conference on Interactive Systems for Training, Education and Job Performance Improvement [SALT, 50 Culpeper St., Warrenton, VA 22186; (800)457-6812; FAX 703-349-3169]

September 8-11, 1993 Columbus, OH; AASLH Annual Meeting [AASLH, 530 Church St., Suite 600, Nashville, TN 37219; (615)255-2971]

September 13-16, 1993 Washington, DC; Electronic Data Interchange for Government [USPDI, Electronic Data Interchange, 1734 Elton Rd., Ste 221, Silver Spring, MD 20903-1724; (301)445-4400; FAX 301-445-5722]

September 20-24, 1993 Cambridge, England; Second International Conference on Hypermedia and Interactivity in Museums [Archives & Museum Informatics, 5501 Walnut St., Ste 203, Pittsburgh, PA 15232; (412)683-9775; fax 412-683-7366]

October 16-19, 1993 Columbus, OH; ASTC Annual Conference [Kim Thomas, ASTC, 1025 Vermont Ave, NW, Ste 500, Dept.47, Washington, DC 20005-3516; (202)783-7200; FAX 202-783-7207]

October 17-21, 1993 Seattle, WA; ARMA International 38th Annual Conference [ARMA International, 4200 Somerset Dr., Ste. 215, Prairie Village, KS 66208-5287; (800)422-2762(US); (800)433-2762(Canada)]

October 27-29, 1993 Boston, MA; CD-ROM Expo & Conference [Mitch Hall Associates, 260 Milton St., Dedham, MA 02026; FAX 617-361-9074]

November 1-4, 1993 Atlanta, GA; CALS EXPO 93 [NSIA-CALS, 1025 Connecticut Ave., NW, Suite 300, Washington, DC 20036; (202)775-1440; fax 202-775-1309]

November 3-6, 1993 Seattle, WA; MCN Annual Conference [Diane Zorich, MCN '93 Program Chair, Peabody Museum of Archaeology and Ethnology, Harvard University, 11 Divinity Ave., Cambridge, MA 02138; 617-495-1969; fax 617-495-7535]

November 14-18, 1993 Seattle, WA; ACM Conference on Hypertext [Steven Poltrock, Boeing Computer Services, PO Box 24346 MS 7L-64, Seattle, WA 98124-0346; (206)865-3270]

November 15-19, 1993 Las Vegas, NV; COMDEX/Fall'93 [COMDEX/FALL, Registration Dept., 300 First Ave., Needham, MA 02194-2722; (617)449-6600; fax 617-449-2674]

December 6-9, 1993 Boston, MA; SGML'93 [GCA, 100 Daingerfield Rd., Alexandria, VA 22314-2888; (703)519-8162; FAX 703-548-2867]

INBOX

REPORTS

British Library Research & Development Department, Information Technology in Humanities Scholarship: British Achievements, Prospects and Barriers, BLR&D Report # 6097 (London, The British Academy, 1993) 50pp.

This report of the Humanities Information Review Panel convened by the British Library and British Academy in 1990 reports on text, data, image and sound bases and electronic tools created or used by humanistic scholars in the U.K. over the past decade. The review touches most of the major intellectual issues and provides examples from a wealth of projects. It concludes with recommendations that access to JANET (the Joint Academic Network), the U.K.'s Internet, be extended to museums, libraries, galleries and research institutes in the humanities.

National Museum of Natural History Collections and Research Information System Master Plan prepared by the Mitre Corporation for NMNH, 1992

Although this is a long-range automation plan for a single institution, it is much more significant to others than such a document would normally be. First, because this is the national institution. Second, because Mitre corporation completed this study while it was developing a higher level plan for the eight largest natural history collections in the U.S. of which the NMNH is one. And third because by paying attention to data standards and hardware and software architecture that are modular and potentially long lasting, Mitre has produced a blueprint that deserves study by any museum computer systems manager in 1993. The report is available from Janet Gomon, Assistant Director for Collections at NMNH, rather than from Mitre.

Recognizing Leadership and Partnership: A Report on the Condition of Historical Records in the States and Efforts to Ensure Their Preservation and Use with a focus on State Historical Record Advisory Boards and State Archives and Records Management Programs, by Vicki Walch (Iowa City IA, Council of State Historical Records Coordinators, April 1993) 2vols. [available free from Gordon Hendrickson, Chair, Council of State Historical Records Coordinators, State Historical Society of Iowa, 600 East Locust, Des Moines IA 50309]

This compilation of reports from the fifty state and seven territories of information about the structure, funding, functions, and services of state records programs and the issues confronting these programs is the most complete source for understanding American governmental archives and records management since the 1963 Posner report. In this compendium of raw material I find the data required to suggest programmatic renovations for "re-inventing government" archives as well as a solid foun-

dition for biennial studies along the same lines promised for the future. Hopefully the Council will keep Vicki Walch employed on these studies for some time to come; they couldn't perform a more useful function to support change and growth among their members.

Commonwealth of Australia, Department of Finance, Information Exchange Steering Committee (IESC), Electronic Data Management Subcommittee (EDMSC), Working Group on Electronic Document Management, "Management of Electronic Documents in the Australian Public Service", Canberra, April 1993, 58pp. AU\$20

This slim but dense report of an interagency group led by Brenda McConchie is a follow-up to a 1991 report entitled *Finding Information Needles in Government Haystacks: a report on electronic management in Australian Government Agencies* which called for attention to business needs, evidence, and more holistic information management approaches. It is difficult to give a brief review because the report contains much of interest mixed with many dangerous perspectives and distortions. I found the emphasis on critical success factors, corporate data management and the use of standards positive, but the emphasis on "documents" rather than records, on the presumed distinction between personal, work group and corporate value, and on the presumed use of these distinctions in disposition management along with the 'life cycle of documents' rather than an understanding of the 'life cycle of systems' to be strongly negative. The report recognizes the importance of time of creation and authorship as identifiers of context, but does not acknowledge other contextual data as equally important nor address how to retain data across software generations and dependencies. The list of document attributes recommended for metadata management (p.20) is inadequate as a proposed minimum and includes elements such as keywords that have no place in the requirement. The inclusion of requirements for information retrieval facilities and discussions of thesauri and AACRII miss the distinction between functional requirements for recordkeeping in general and those of a registry application system. The point of several extended discussions of off-the-shelf office applications missed me entirely as did the import of a somewhat dubious technology forecast. I wish the slim discussion of migration issues had been extended and related to the earlier parts of the report and that the discussion of architectures had focussed on issues rather than describing components. Hopefully the sub-committee will take the next step and provide a set of guidelines that can be used in action rather than a discussion document which identifies some of the elements to be considered but barely begins to put them together.

Managing Electronic Records, Dagmar Parer and Ron Terry eds., Canberra, ACT, Australian Council of Archives/Australian Society of Archivists, 1993 AU\$25.

These papers from a one day seminar presented by the Australian Archives to explain and explore their six part guidelines for management of electronic records with an invited audience of archivists. The eight papers which

comprise the body of the report do more than explain the framework being pursued by the Australian Archives, they also expand on ideas and methods developed elsewhere and provide a foil for discussions, the gist of which is recorded by the editors. An annotated bibliography compiled by Eileen Tannachion of articles and books on electronic records from January 1990-April 1993 includes a number of publications not known in the U.S., plus useful summaries of many that are.

Institute of Museum Services, National Needs Assessment of Small, Emerging, Minority and Rural Museums in the United States: A Report to Congress, September 1992 (Washington, USGPO, 1992) 66p. + appendices [Available from Institute of Museum Services, 1100 Pennsylvania Ave., NW, Washington DC 20506]

While this report is not about informatics, and indeed makes few direct references to documentation related programs of museums, it does provide a profile of a large number of US museums which begins to explain why the information revolution may be long in reaching them. The overall picture is rather dismal.

Library and Information Service of Western Australia, Electronic Records: An Investigation into Retention, Storage and Transfer Options. LISWA Research Series #4 (Perth, LISWA, 1993) 77p.

This report contains brief discussions of issues in electronic records management along with appendices on types of electronic records and storage media, a glossary and bibliography. While it breaks no new ground, it represents the kind of technical paper that most state archives should be trying to make available to the agencies with which they work, and could be useful to other archivists as a starting point for their own brochures. Comments are being invited by Janine Douglas, Records Management Office, LISWA, Alexander Library, James St., Perth WA 6000, AUSTRALIA.

University of Alabama at Birmingham, "Guidelines for the Acquisition of Document Imaging Systems: Matters to Consider Before and During Acquisition" (Birmingham, University of Alabama, July 1992)

Most of the text consists of questions or appendices, both of which are quite helpful. The body contains somewhat less helpful "objective" data, but also has formats for blank charts for evaluations and needs assessment recording. [Contact James Roe, Chairman, 205-934-6000]

Technology, Scholarship and the Humanities: The Implications of Electronic Information is the summary of a conference previously reported in these pages (vol.6#3 p.10-12).

The printed volume is being distributed free from The Getty Art History Information Program, 401 Wilshire Blvd, Suite 1100, Santa Monica, CA 90411-1145 or by ftp from <ftp.cni.org> selecting the directory [/cni/documents/tech.schol.human/papers](ftp.cni.org/tech.schol.human/papers)

Preserving Archival Material Through Digital Technology: A Cooperative Demonstration Project (October 1992-March 1993), Final Report [S10 from Cornell University Library, Dept. of Preservation and Conservation, 215 Olin Library, Ithaca, NY 14853]

This final report on the cooperative research project being conducted under project director Anne Kenney at Cornell University on behalf of the Eleven Comprehensive Research Libraries and Xerox Corporation contains many pages of scanned and photocopy reproductions with detailed data about scanner settings that were part of a recent test performed by Cornell on unpublished materials contributed by the member institutions. The overall results, which are complex and subtle, could be crudely summarized by stating that scanning was, in general preferred to photocopying for reproduction of originals but that many archivists found both scanned and photocopied materials inadequate. Gray-scale capture was a definite mixed blessing. Differences between individuals reviewing the results were significant, reflecting the highly subjective nature of assessments of reproduction quality. Anyone involved in scanning will want to obtain a copy of the report; for others it does not effect the conclusion reported from the first report (see A&M vol.6#3p.18).

BOOKS

European Multimedia Yearbook 93 (London, Interactive Media, 1992) 539p.

This directory of vendors, developers and products is also a valuable compendium of articles on the state of multimedia markets, technologies, products, national developments and prospects by people well positioned to identify important trends. More than a dozen interviews with major corporate figures from Apple, IBM, Intel, Kodak, Microsoft, Philips, Sony, and other major firms comprise the first section of the volume. Section 2 brings another dozen experts views on various niche markets and outlets. Section 3 includes overviews of the situation in ten European countries and the EEC. Another fifteen contributions dealing with emerging and existing technologies and product lines are followed by a resource section citing major publications and conferences and a glossary. From page 175 on we get a detailed directory, with lots of well presented information over 800 companies, 900 distributors, and 700 products with indexes by platforms, countries, dealers etc. This tremendous resource compiled by Jim Ayers, Jane Callaghan and Signe Hoffos of Multimedia Ventures is well worth the somewhat steep asking price.

Keeping Archives, second edition, edited by Judith Ellis (Melbourne, D.W.Thorpe, 1993)

The second edition of *Keeping Archives* is more adventurous than the first; it's authors (Australia's finest) offer more new ideas, more untested possibilities and more

speculation than they did in the somewhat more instructional first edition. I was particularly pleased to see Barbara Reed's treatment of the PROF's case as a case study of new issues in appraisal and disposal. Nevertheless, as the two chapters by David Roberts on 'Computers and Document Imaging' and 'Managing Records in Special Formats' demonstrate, the requirements of the changing communication environment are still something of an add-on to most archival concerns rather than being treated as an opportunity to restructure archival thought.

Remus 91: La Museologie des Sciences et des Techniques: Actes du colloque des 121 et 13 Decembre 1991 (Paris, OCIM, 1993)

These conference proceedings of the first REMUS conference contain half a dozen articles on multimedia applications in museums that will be of interest to anyone who can read them in French.

ARTICLES

Richard E. Barry, "Electronic Document and Records Management Systems: Towards a Methodology for Requirements Definition", unpublished paper in **Proceedings of Document Management 93**, London, June 1993

Rick Barry's analysis of the functional requirements for document management systems for the World Bank has revealed an exciting implication of the definition of records as products of business transactions. By taking the perspective of the document as the unit of analysis, Barry demonstrates that documents do not have life-cycles so much as complex paths through time and organizations in which they may be drafted, approved, reviewed, incorporated by reference in other documents, submitted as appendixes, used as justifications, redrafted etc. These complex paths can be represented using the techniques of state-transition diagramming in which the document is seen traversing a universe of states. What makes this so exciting is that if we take the perspective of the states, each of which is a business transaction, we can see that records are created at each state and determine the appropriate retention of records based on the state (unshared draft, shared draft, forwarded draft, reviewed draft with comments, etc...). If we take the position of record transactions proposed by me in the UN ACCIS report and since, and compare it with the state-transition model, we discover that they represent mirror images of each other and because they are equivalent the two can be used as cross-checking analytical techniques.

Barry Cipra, "Electronic Time-Stamping: The Notary Public Goes Digital", **Science** vol.261, 9 July 1993, p.162-3

This is a journalistic account of the development of a public method of time stamping by scientists at Bellcore which has significant implications for electronic records management.

Vincent DeSanti, "A Policy Framework on the Dissemination of Government Electronic Information: Some Remarks", **Government Information Quarterly**, vol.10#2, p.255-260

This introduction to a section of *Government Information Quarterly* devoted to electronic information dissemination proposes a framework based on a concept of information life-cycle that is distinct from that used by either archivists or information systems professionals, but provides a useful way of looking at the issues and the other papers in this issue.

Monika Fleischmann, "A Virtual Walk through Berlin Visiting a Virtual Museum", **Virtual Reality World**, vol.1#1, Spring 1993 p.n-p

As usual for virtual reality, this article is about an idea, not a real museum or an existing application. Apparently there are some real people working on it, although this too is hard to tell amidst the flight of fancy.

Ecaterina Geber and Irina Oberlander-Tarnoveanu, "The National Cultural Heritage Information System in Romania", **Visual Resources**, vol.9, 1993, p.127-141

This report on the impressive history of the Romania cultural heritage information system and its current status as it makes a transition to more distributed computing still supported by central administration and terminology control provides sufficient detail to assure us that the Romanians were every bit up with their colleagues in the rest of the world even before 1989, but not enough to answer questions about the contributions they might be able to make based on their significant experiences. I suppose we'll have to visit to learn the details and hope I get the opportunity to do so.

Jay E. Gillette, "Art at a Distance: A Proposal to Demonstrate Advanced Information Technologies Using Art from Distant Museums", **Multimedia Review**, vol.4#1, p.48-50

As titled, this article consists of a proposal to use digitally transmitted art from museums in public spaces such as airports to create a remote gallery. The advantages of security and public exposure are noted, and some technical options for transmitting and displaying the images are discussed, but essentially the article is no more than a proposal for an initial feasibility study.

Glen Isaac and Derek Reimer, "Right from the Start: Developing Predescriptive Standards at the British Columbia Archives and Records 'Service'", **Archivaria** #35, Spring 1993 p.86-98

The authors explain how the BCARS has taken the concept of acquiring information required for description from the records creators forward into a concrete plan for data acquisition including dictating standards for agency metadata (although they don't use the term). This is the kind of innovation in archival documentation that repre-

sents a change in methods capable of overcoming the orders-of-magnitude gap between our descriptive methods and the task we face in archival documentation. It should be studied carefully and extended by others.

Mark J. McCall, "Converting a Museum Collections Management flat file database to a semi-relational structure", **Archaeological Computing Newsletter** 34, March 1993 p.10-18

A useful cautionary tale for those who think this should be easy. It got done, but there was a lot of work and programming involved.

Belinda Crawford Seagram, Leslie Patten and Christine Lockett, "Audience Research and Exhibit Development: A Framework", **Museum Management and Curatorship**, vol.12 #1, March 1993 p.29-41

This analysis of the various positions museums have taken with respect to shaping exhibition around user requirements makes useful suggestions about how to determine the user needs and how to balance them against interpretive requirements of the material.

Susan Siegfried, Marcia Bates and Deborah Wilde, "A Profile of End-User Searching Behavior by Humanities Scholars: The Getty Online Searching Project Report #2", **Journal of the American Society for Information Science**, 44(5) 1993 p.273-291

Offered free, unlimited searching on Dialog, about 1/3 of the visiting scholars at the Getty Center for the History of Art and Humanities declined to participate at all, about one fifth of those who did participate didn't actually do any searching in their year in residence, another fifty did only one search and 56% did less than two hours of unassisted searching overall. Details emerge in the study, but the overwhelming result is that even if searching is free and users are exposed to the benefits and trained, few humanities scholars will use today's databases. There is a finding worthy of further exploration if I ever heard one!

NEWSLETTERS & JOURNALS

CD-ROM Today: The Magazine of Personal Multimedia, vol.1#1 July/Summer 1993, 6 issues for 14.95 (P.O.Box 51478, Boulder CO 80323-1478). Lots of ads, lots of color, not very technical articles and designed to be sold largely on newsstands. It will work if CD's really take off.

Exhibitionist, National Association for Museum Exhibition, P.O.Box 876, Bristol CT 06011-0876 It was bound to happen eventually and I couldn't be happier to see it: The Exhibitionist finally carried a couple of computing-related articles. Greg Smith's short piece on Computer-Aided Design: Getting Started (p.31-33) and John Cavala's "Speaking Your Mind and Learning to Fly" about exhibits at the Pacific Aerospace Museum (p.41-47) appear in the current issue, vol 12#1 Spring 1993.

NEWS

NARA ON THE INTERNET

The Center for Electronic Records is interested in user reaction to its recently established FTP site (accessible by logging on as an anonymous user to FTP.CU.NIH.GOV under the directory NARA_ELECTRONIC (e.g., CD NARA_ELECTRONIC). The service consists of a READ.ME file, a Title list, Preliminary and Partial listings of data files, some general information about the Center and about electronic records and a description of its fee based services. For feedback, contact Theodore Hull at 202-501-5579; BITNET to TIF@NIHCU. Plans are to have an Internet of their own in the fall with the move to the new building. An internal committee is examining the kinds of services that might be offered at such a node. If you have recommendations about what you would like to see, pass them along.

ARCHIVES & RECORDS TECHNOLOGY COMMITTEES

The first joint meeting of the NAGARA Committee on Information Technology and the SAA Committee on Automated Records and Techniques in Washington DC April 21-23 brought together over thirty of the most active participants in electronic records management in the U.S. and Canada. The meetings (there were in effect three - a business day for each group and a shared workshop day) provided an opportunity to mesh agenda's and to push forward some ideas on the relationship between electronic records objectives and program structures. The latter theme was the subject of papers presented at the meeting on the programs of the US and Canadian national archives, the state archives of Alabama, New York, Pennsylvania, and Wisconsin, the Universities of Michigan and Penn.State, and the United Nations and World Bank. These papers, together with a full report on the meeting and introductory papers by Margaret Hedstrom and David Bearman are being published this summer as Archives & Museum Informatics Technical Report #18: Electronic Records Management Program Strategies. [Contact Archives & Museum Informatics, 5501 Walnut St., Suite 203, Pittsburgh, PA 15232-2311; 412-683-9775; fax 412-683-7366]

SAA PUBLISHES MASTERS DEGREE GUIDELINES

The Society of American Archivists has published a draft of "Guidelines for the Development of a curriculum for a Master of Archival Studies" comment on which is invited until August 31, 1993. The draft [available from Frank Boles, Clarke Historical Library, Central Michigan University, Mt. Pleasant MI 48859; 517-774-3965] was submitted by the Committee on Education and Professional Development to the SAA Standards Board in April. They call for SAA endorsement of "autonomous master's degree programs that emphasize the disciplinary nature of

archival science, the interdisciplinary character of archival studies, the scholarly dimension of the archival field and learning process and the importance of professional acculturation." (emphasis original). Specifically they outline a curriculum focussing on "contextual" knowledge, archival knowledge and complementary knowledge and calls for a thesis or comparable research project as well as a practicum. The "Contextual knowledge" area is heavy on history and light in organizational theory and systems analysis and the complementary knowledge gives equal weight to preservation, library and information science and management. The draft defines adequate programs as those possessing autonomy, being of a length equal to that of other master's programs, having at least one full-time tenure track position occupied by an incumbent with 'formal academic education in archives and relevant archival experience'. It requires that such programs be supported by library, computing and laboratory materials and emphasizes the importance of full-time students to such programs with the financial support that this implies. While these guidelines are a tremendous improvement over the 1988 guidelines, the minimalist stance suggested by one full-time faculty member and the over-emphasis on records handling aspects of the discipline rather than analytic, conceptual and technical training, leaves much room for improvement.

NEW YORK STATE TELECOMMUNICATIONS REPORT

Telecommunications: A Vital Infrastructure for the New New York (Report of the New York State Forum for Information Resource Management - NYSFIRM - Project on Telecommunications Infrastructure, December 1992. 10p.)

This report summarizes a political case for coordination of telecommunications endeavors in New York State that could be equally well applied anywhere else. It identifies technical barriers and suggests implementations that will put New York in the forefront of providing services to its citizens and commercial community. Of course, implementing the recommendations is something else again. [NYSFIRM, Rockefeller Institute of Government, 411 State St., Albany NY 12203-1003].

AVIADOR ON RLIN

Software that indexes and interacts with a locally mounted videodisc from the Avery Art Library, is available over the Research Libraries Information Network (RLIN). The service, called the Avery Videodisc Index of Architectural Drawings, or AVIADOR, links the 41,000 images on the disc to a PC running Microsoft Windows. To establish an RLIN search account, dial 800-537-7546 or for more information write to RLG, 1200 Villa St., Mountain View, CA 94041-1100.

LC GOES ON-LINE

Since April 30, the Library of Congress Information System (LOCIS) with its 26 million records in 35 files has been free and publicly available over the Internet at locis.loc.gov from 6:30 am. - 9:30 pm. EDT Mon-Fri, 8 am-5 pm Saturday and 1pm-5pm Sunday. Numerous databases other than the card catalog are available.

DIGITAL IMAGES FOR PHOTO PRESERVATION

The Commission on Preservation and Access Newsletter reported in July 1993 on the use of digital imagery as a preservation and access method by the Basler Mission Archive in Switzerland. The Archive is rephotographing and digitally imaging 50,000 historical photographs taken in Ghana, Cameroon, South India, South China and Indonesia from the 1840's to 1945. (Contact Basler Mission, Abt. Archiv/Photoprojekt, Missionstrasse 21, CH-4003, Basel, Switzerland)

LEGAL REQUIREMENTS FOR ELECTRONIC IMAGING SYSTEMS

AIIM is sponsoring an interactive videoteleconference on legal requirements for electronic imaging systems Wednesday October 13 at noon EDT. Downlink sites around the country have subscribed and others may still sign up. If interested in attending at a site near you or in subscribing as a site, call the AIIM Education Department at 301-587-8202.

LIBRARY OF CONGRESS OPENS MIA/POW DATABASE

For reasons I still don't understand, the Library of Congress rather than the National Archives is providing public access to the declassified Department of Defense index series of POW/MIA's entitled Correlated and Uncorrelated Information Related to Missing Americans in Southeast Asia. (Do you imagine they mean corroborated and uncorroborated?). Public access was required under the 1992 Defense Authorization Act requiring the placement of the files in a "suitable library-like location within a facility within the National Capital region for public reviewing and photocopying". The workstation mounted by LC provides information about over 20,000 documents which are part of this series, but access to the documents themselves (at least if they include names) is likely to be restricted for reasons of privacy.

NARA POLICY ON STORAGE MEDIA EVOLVING

In a lightning quick response to the Federal Computer Week articles of June 15 and 21 (dated July 19!) Acting Archivist of the United States Trudy Peterson parried the editorial lampoon of NARA optical disk policy by citing three developments at NARA that somehow are intended

to show progress. First the Center for Electronic Records "will soon be formally announcing that it will accession records in CD-ROM formats used by the Government Printing Office". Second the Center is working on ways to receive records by transfer over networks rather than on disk or tape. And third "early in the fall, the National Archives plans to release guidelines for the use of digital imaging and optical media storage technologies in the Federal Government". She hastens to add that "You will notice that this does not say that optical disks are an approved archival storage medium." Confused yet? I'm sure it will become clearer in a few years.

LISTSERV UPDATES

Readers are always asking me how to get access to various listservs on the Internet. Here are a few that might be of interest to readers. To subscribe to these, send a message to any of the following Internet addresses containing only the words 'SUBSCRIBE' name-of-list your-name

AMIA-L: listserv@ukcc.uky.edu

ARLIS-L: listserv@ukcc.uky.edu

NISO-L: listserv@nervm.nerdc.ufl.edu

ELECTRONIC MAIL ASSOCIATION

Yes. There is an electronic mail association, which holds an annual conference, publishes reports on technical matters, and otherwise supports the e-mail industry. Non industry organizations (users) can belong for \$1000. EMA, 1555 Wilson Blvd., Suite 300, Arlington VA 22209-2405; 703-875-8620; fax 703-522-0241.

Archives and Museum Informatics (ISSN 1042-1467) is a quarterly newsletter published by Archives & Museum Informatics, 5501 Walnut St., Suite 203, Pittsburgh PA 15232-2311; (412)683-9775, fax 412-683-7366.

Submissions of press releases, publications and software for review, articles, and letters to the editor are welcomed. Copy is preferred double-spaced. Longer articles will be requested in machine-readable form if accepted for publication. Deadlines for contributed articles and press releases are the 15th of March, June, September and December.

Subscriptions are available on a calendar year basis at \$80 for institutions, \$40 for individuals (paid in advance, by personal check, and delivered to their home address), with a surcharge of \$5 for postage to Canada and Europe and \$10 elsewhere outside the USA. All payments must be in U.S. currency.

Archives and Museum Informatics also publishes occasional technical reports available for purchase as individual volumes or on a standing order basis. Standing orders are entitled to a 10% pre-publication discount and are mailed free of handling fees. Pre-paid orders include handling. Billed orders are subject to a \$5 billing/handling fee plus postage surcharge.

SOFTWARE & SYSTEMS

DEVELOPMENT SOFTWARE AT AAM

The AAM Conference saw fewer membership, development and participation systems this year than in the past, but those which showed are well established and each had made extensions to its basic software to consolidate its hold on the market.

Blackbaud Inc. [4401 Belle Oaks Dr., Charleston SC 29405; 800-443-9441] showed release 6.0 of The Raiser's Edge TM with new prospect search and timed batch reporting functions along with Paragon TM its planned giving system.

Master Software Corporation [8604 Allisonville Rd., Suite 309, Indianapolis IN 46250; 800-950-2999] showed release 7.0 of Fund-Master which now runs in DOS and UNIX environments.

Advocate Software [92 Montvale Ave., Stoneham MA 02180; 800-370-2790] demonstrated its Advocate Software TM which is used by about 150 university and social activist groups as well as the Guggenheim and Boston Museum of Fine Arts. It was my first in depth exposure to what appears to be a reasonable system.

Paciolan Inc. [2875 Temple Ave., Long Beach CA 90806; 310-595-1092] has added a group scheduling and facility reporting module to its offerings but I found a number of rough edges in trying to use it, especially returning to prior bookings and changing schedules.

2b Technology Inc. [Innsbrook Corporate Center, 4222 Cox Rd., Suite 107, Glen Allen VA 23060; 804-747-4849; fax 804-747-5112] is also tightening up VISTA, its reservation and scheduling system, with a new release expected this fall.

Museums and archives interested in comparing these products and others are still advised to get a copy of Archives and Museum Informatics Technical Report #11, Functional Requirements for Membership, Development and Participation Systems (\$20) which discusses desirable features and provides a framework for comparison of products.

COLLECTIONS MANAGEMENT SOFTWARE AT AAM

Mostly the same players returned to the AAM stage this spring, some with stronger products.

Cactus Software Inc. [15 Cary Way, Morristown NJ 07960; 201-540-0980] showed what is described as a multi-user version of their software, although it was only demonstrated on a single workstation.

Cuadra Associates Inc. [11835 W. Olympic Blvd. Suite 855, Los Angeles CA 90064; 310-478-0066; fax 310-477-1078] continues to come to AAM meetings with the old

line oriented versions rather than the newer Windows versions of its software, and continues to leave most users cold although the image linking features are very nice. It's too bad because they have a fast, open, multi-user product which could be usefully implemented in many large archives and museum data/imagebase contexts. Despite the inroads they have made over the years, STAR won't be widely used in museums until they decide to sell it differently in this market.

Gallery Systems [221 West 82nd St., New York, NY 10024; 212-873-9232] showed a more fully developed version of the Museum System, which is now a reasonably broad collection information facility, still without much collections management functionality. The product is now equipped with the AAT for vocabulary control and some exhibition and deaccessioning functions.

History Database [24851 Piuma Rd., Malibu CA 90265; 818-591-9371] is now a fully commercial product, although it is still supported solely by its developer David Clark.

OakTree Software Specialists [498 Palm Springs Dr., Suite 100, Altamonte Springs FL 32701; 407-339-5855] conducted a survey of its owners to determine what features to include in the next upgrade. Its 60+ sales reflect a continued robust performance of an exceptionally modestly priced Macintosh product which can use all the capabilities of Finder 7.0 and has a wide range of fields in its standard data structure.

Questor Systems Inc. [187 N. Hill Ave., Pasadena CA 91106; 818-356-0808] showed release 8 of its Argus system, the last before it introduces a full GUI interface. They showed new public search features and some pan and view capabilities with digital images. They said they have developed an interface to the Photo-CD which is in use at IBM Gallery in NYC, the University of Wyoming Museum of Art and the Dallas Museum of Art.

Willoughby Associates [266 Linden St., Winnetka IL 60093; 312-284-6600; fax 312-284-3827] made its splash with a new product here was neither new (we had seen it in the fall at MCN) nor a product yet (it is running on a pre-release version of FolioViews software from Mead Data). It is, however, a departure for Willoughby from its pattern of the past few years of selling increasingly bounded software products. Six years ago, when the firm was still selling MILAM its software needed to be accompanied by substantial museum consulting in which Lenore Sarasan and her staff could rightly claim considerable expertise. With the advent of Quixis at the high end, this need remained, but as Willoughby has increasingly shifted its focus to lower end products, first MIMSY, then SNAP (at \$995) and to a plethora of add on products, the company has been doing less customization in favor of supporting growing numbers of users. K'Nectics tm reverses that trend. Here is a front end delivery product that uses off-the-shelf software from a third party. What Willoughby is adding in value is its substantial knowledge of how to integrate a vast array of museum data sources in as

seamless a user presentation and research environment as can be provided by today's software. Together with their data entry and image capture services, this returns Willoughby to the roll of a collections management support service as well as a software vendor.

MULTIMEDIA COMPUTING AT THE AAM

Dean Friedman Productions Inc. [33 Dirubbo Dr., Peekskill NY 10566; 914-736-3600; fax 914-739-2986] showed its very fun InVideo games in which the movements of the human body, captured by camera and feedback to an Amiga computer direct the sequences of the games in place of a mouse. Friedman also brought models of his wildly imaginative Music Atrium for children installed at the Eureka Children's Museum in Halifax, UK. There are no computers in these but still, they display terrific interactivity.

New England Technology Group [One Kendall Sq., Building 700, Cambridge MA 02139; 617-494-1151] was present with the wide display of high technology we have come to expect and a number of new interactive multimedia productions developed for clients in the past year.

Sanctuary Woods Multimedia Corporation, with addresses in Ontario and British Columbia in Canada and California and Texas in the US [Hdqr. 1006 Government St., Victoria V8W 1X7, CANADA; 604-380-7582; fax 604-388-4852] was promoting itself as an interactive multimedia developer by showing some products it has made for clients.

Visual Information Inc. [600 Seventeenth St., Suite 415 South, Denver CO 80202; 303-892-0304; fax 303-892-9819] was showing its ImageBase software and promoting the sale of collections of high resolution images and databases on CD's. It is willing to work either as a publisher or as a software vendor, and has a special interest in historical photography archives.

GETTY + KODAK = LUNA

On June 1, the J.Paul Getty Trust and Kodak announced the formation of a joint venture, LUNA Imaging Inc. is to "offer digital imaging services and electronic publications to the academic community." The firm will be headed by Michael Ester, previously director of the Getty Art History Information Program, who assumes the Presidency September 1, 1993. While the scope of LUNA is unclear the first project announced will be a digital archive of several thousand drawings from the Frank Lloyd Wright Foundation to be used at the Foundation and released with text in an electronic publication.

FULL IMAGE MANAGEMENT SYSTEM (F.I.M.S.)

World Fine Art Exchange Inc. [670 Main St., 4th Fl., Willimantic CT 06226; 203-456-4747; 800-825-6789] has added a software package for the 80486 which it calls

F.I.M.S., of Full Image Management System to its previous offering ARTLINK, which was an online service to represent artists and galleries directly to a buying public over telecommunications.

IMAGE SERVICES FOR NATURAL HISTORY/SCIENCE MUSEUMS

Optilearn [P.O.Box 997, 15 Park Ridge Dr., Suite 200, Stevens Point WI 54481; 715-344-6060; fax 715-344-1066] is promoting itself as a service bureau for transferring images to CD's and as a developer of interactive programs especially for natural history and science museums. In addition, they have a short list of optical publications for videodisc and CD's which they are selling, and which were presumably developed by them.

NEW TO MUSEUM FUND ACCOUNTING

Micro Information Products Inc. [505 E. Huntland Dr., #340, Austin TX 78752-3772] appeared at the AAM this year, targeting its fund accounting package to museums for the first time. They were distributing a free booklet entitled "A Guide to Purchasing Fund Accounting Software" which is very objective (it never mentions their product), and I think a quite useful basic introduction both to why non-profits need fund accounting software and to the software search and acquisition process. Their product MIP Fund Accounting, has General Ledger, Accounts Payable, Accounts Receivable, Budget Reporting, Payroll, Fixed Assets and Encumbrances/Purchase Order modules. Options also include interfaces to commercial databases and spreadsheets and secondary data entry facilities. The product comes in both single user and networked versions at \$795-995 per module for single users and 1195-\$1495 for networked modules. Software maintenance, support and training are offered at per module rates. The company has about 1700 users now, largely in governmental organizations, and maintains telephone support 10 hours a day.

SASKIA OFFERS DIGITAL IMAGES

Saskia, a firm long associated with provision of art slides, is now offering customers low resolution catalogs of its images on mass produced CD-ROM or higher resolution images specifically licensed to them on individualized CD-ROM's. Both use ImageAccess software to view the images on either Macintosh or Intel chip platforms. [Saskia Ltd., 2721 NW Cannon Way, Portland OR 97229; 503-520-8855; fax 503-626-1162]

INMAGIC MOVES

Inmagic Inc. has a new address at 800 Cummings Park, Woburn MA 01801-6357; 617-938-4442, fax 617-938-6393. The company has experienced significant new sales due to the release of a document imaging enhanced version of its text database

PC DATABASE TO MARC FORMAT CONVERSION

Dan Cantrall [Oregon State Archives [800 Summer St. NE Salem OR 97310; 503-373-0701; fax 503-378-4118] reports that he has tested "The Data Magician", a program that takes tab delimited, comma delimited, or DBF files and converts them to MARC, with considerable success. He is writing up his experience and will be glad to share further information with readers.

EDI for PC's

TSI International [45 Danbury Rd., Wilton CT 06897; 800-EDI-2120; fax 203-762-9677] is advertising Trading Partner PC, EDI software for Windows. Start up costs for a single PC at one user site are about \$1000.

LARGE IMAGE BASE

VTLS Inc. [1800 Kraft Dr., Blacksburg VA 24060; 703-231-3605; fax 703-231-3648] is cooperating with Princeton University in a project that will capture 6.5 million card catalog card images and provide access to them using the NEXTSTEP interface. Initially 40 80486 chip workstations throughout the library system will use the catalogs; ultimately OCR will be used to convert the images to tagged records. The cost factors involved led Princeton to go the imaging route: estimates for retrospective conversion were 11 years and \$18M while the imaging project is to be completed in nine months at a cost of \$1M.

STANDARDS

COMPUTER INTERCHANGE OF MUSEUM INFORMATION

The Museum Computer Network has issued the Standards Framework for Computer Interchange of Museum Information (First edition, May 1993) and a prospectus for a Consortium to carry out the work of implementing the standards on electronic information networks available to museums. The Standards Framework, authored by David Bearman and John Perkins was published as SPECTRA vol.20 #2/3 and as a freestanding report. It discusses the history of the CIMI initiative and the requirements for interchange of museum information and then defines a suite of standards and a conceptual framework for museum data interchange. The Prospectus announces the plans for a consortium to coordinate museum technical standards and encourage implementation of the framework and standards compliant museum services. Membership in the Consortium cost \$25,000 p.a. Founding members, who have made a three year commitment to the Consortium include the Canadian Heritage Information Network and the Research Libraries Group. Additional founding members are being solicited, with a start-up date anticipated at the beginning of calendar year 1994. [For copies of either document or further information about the Consortium or Framework, contact John Perkins, CIMI Project Manager, at 902-826-2824; fax 902-826-13337; Internet jperkins@fox.nstn.us.ca]

WISCONSIN ELECTRONIC RECORDS GUIDELINES

The Wisconsin Public Records and Forms Board approved Guidelines for Management of Electronic Information which are targeted at agency administrators, program managers, records and forms officers and data processing professionals and address disposition and preservation of electronic records. [Contact: Peter Gottlieb, SHSW, 816 State St., Madison, WI 53706]

DOCUMENTATION AND PROTECTION OF CULTURAL PROPERTY

A meeting held at the Council of Europe on July 8-9 1993 launched an international collaborative project aimed at defining core documentation standards for the description and unique identification of cultural property. The meeting, which addressed both the goals of the project and the possible sponsors, contributors and cooperating organizations, was framed by a draft working paper entitled Project Description and Strategies and by a position paper that explained the context and rationale for the project. The meeting considered the scope of the concept of 'cultural property' and models for standards development that could benefit the conduct of the effort. [Contact: Eleanor Fink, Getty Art History Information Program, 401 Wilshire Blvd., Suite 1100 Santa Monica CA 90401-1455; 310-395-1025; fax 310-451-5570; Internet enq92ef@mvs.oac.ucla.edu]

ARCHIVAL DESCRIPTION DOWN UNDER

The Australian Society of Archivists is circulating for comment a draft document entitled ACPM: Australian Common Practice Manual Description (Records). Version 4, June 1993 (93.1) explains that ACPM is an Australian response to APPM, RAD, MAD and ISAD(G) and grew out of the need for the Australian representative to the ICA Commission meeting in January 1993 (Stockholm) to represent Australian views on ISAD(G). Included in this draft is the full analysis of responses by Australian archives to a questionnaire circulated by the ASA about each of the ISAD(G) data elements. The questionnaire enabled Australian archivists to report whether they use a data element and if so, whether they would follow the rule of ISAD(G), its ASA redraft, or another standard. [Contact: Chris Hurley, Chief Archivist, Public Records Office of Victoria, Melbourne]

HYPERMEDIA AND HYPERTEXT STANDARDS

An international workshop on hypermedia/hypertext standardization was held in Amsterdam April 22-23 under sponsorship of the EEC IMPACT2 Programme. Sessions were divided between 'structure' standards (ODA-Hyperextensions, Hytime, MHEG, AVI) and 'content' standards (MPEG, JPEG, JBIG, GDID, Audio, DVI IIF etc.). All areas of the industry were represented in the list of participants. [For further information contact: HYPWKS Secretariat, c/o Johan van Halm Information Consultancy, P.O.Box 688, NL-3800 AR Amersfoort, Netherlands; fax 31.3.365.0945]

JOT STANDARD FOR "ELECTRONIC INK"

The Jot standard for storing sequences of movements made by 'pens' on pen computers made considerable headway with announcements at COMDEX that 22 major companies had agreed to it. The standard is important for signature verification systems and handwritten annotation interchange and can be expected to be implemented by Apple, Microsoft, Lotus, GO, General Magic and others. Data includes not only x/y coordinates for strokes but also data about the pen pressure, height above writing surface, and angle. Other data can be interchanged including color, width and shape of the pen track, rate at which data points were captured etc. [Contact: Slate Technical Support, Slate Corporation, 15035 N. 73rd St., Scottsdale AZ 85260; fax 602-443-3606]

NEW MPC STANDARD

The Multimedia PC Marketing Council has essentially admitted that its initial MPC specification was set too low by adopting a new "Level 2" specification which calls for 25Mhz '486 CPU, 4MB RAM (8 preferred), 160 MB hard disk, double-speed XA-compatible CD-ROM Drive, and a display resolution of at least 640x480 pixels with 16 bits of color depth. WARNING: Even the new specification should be considered very much a minimum by anyone interested in acquiring multimedia capable PC's.

AITF REVIEWS CATEGORIES

The Art Information Task Force has held several meetings this spring at which parts of its draft "Categories for Description of Art Works" have been reviewed by committees comprised of scholars from different fields. As of May it had held meetings on graphic arts and works on paper, sculpture and decorative arts, and contemporary art. A meeting on non-European traditions was planned. Each meeting was preceded by circulation of a highly detailed questionnaire about the overall categories and about each category separately. [Contact Deborah Wilde, Project Manager, Getty Art History Information Program, 401 Wilshire Blvd. Suite 1100, Santa Monica CA 90401-1455; 310-395-1025; fax 310-451-5570]



New Archives and Museum Informatics Technical Reports

#16 **Interactivity in American Museums** by Stephanie Koester [August 1993]

Research report based on interviews with American museum professionals on their experience in using computer-based interactive multimedia technologies in museum settings.

#17 **Planning for Museum Automation** by John Perkins & **Planning for Museum Automation: A Teachers Resource Guide** by John Perkins [Anticipated publication September 1993]

These materials for a course on planning for systems, from initial requirements through implementation and on-going evaluation, were developed by the Museum Computer Network with grants from numerous agencies. The teachers edition includes ideas for curriculum and examples for presentations as well as reproducible overheads.

#18 **Electronic Records Management Program Strategies** edited by David Bearman and Margaret Hedstrom [Anticipated publication September 1993]

In the spring of 1993, a joint meeting of the SAA CART committee and the NAGARA CIT committee brought administrators of electronic records management programs together in Washington DC. Papers prepared for that meeting, the results of brainstorming sessions held during the meeting and reflections on program options by the editors are published here as options for those planning such programs.

#19 **Archiving Electronic Records** by David Bearman [Anticipated publication September 1993]

Since drafting Guidelines for Managing Electronic Records for the UN ACCIS panel in 1989, David Bearman has been developing approaches to archiving electronic records based on design, implementation and standards as well as policy. In this volume he brings together functional requirements for archiving, the four approaches to satisfying those requirements, and proposals regarding organizational and program variables in implementation. The volume consists both of previously published articles which appeared in a wide range of journals internationally and new pieces which weave the material together in a systematic presentation.

#20 **Museums and Interactive Multimedia: Proceedings of the 2nd International Conference on Hypermedia & Interactivity in Museums** [Anticipated publication October 1993]

These Proceedings of ICHIM-93 include over sixty presentations by authors from almost 20 nations on the issues in design and implementation of interactives and their implications for museums.

#21 **Partners in Research: Improving Access to the Nation's Archive**, by Paul Conway. User Studies at the National Archives and Records Administration. [Anticipated Publication November 1993]

These user studies, conducted at the National Archives in 1991/92 were suppressed by NARA and only released in a modified form a year later. Here the original studies and the author's covering report are reprinted along with an essay on their methodological basis and the application of these methodologies to other archival user studies. In addition, the author gives an account of the reception of this research at the National Archives and the subsequent censorship of the results.