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July 2004

SLA in Nashville

SPECIAL LIBRARIES ASSOCIATION
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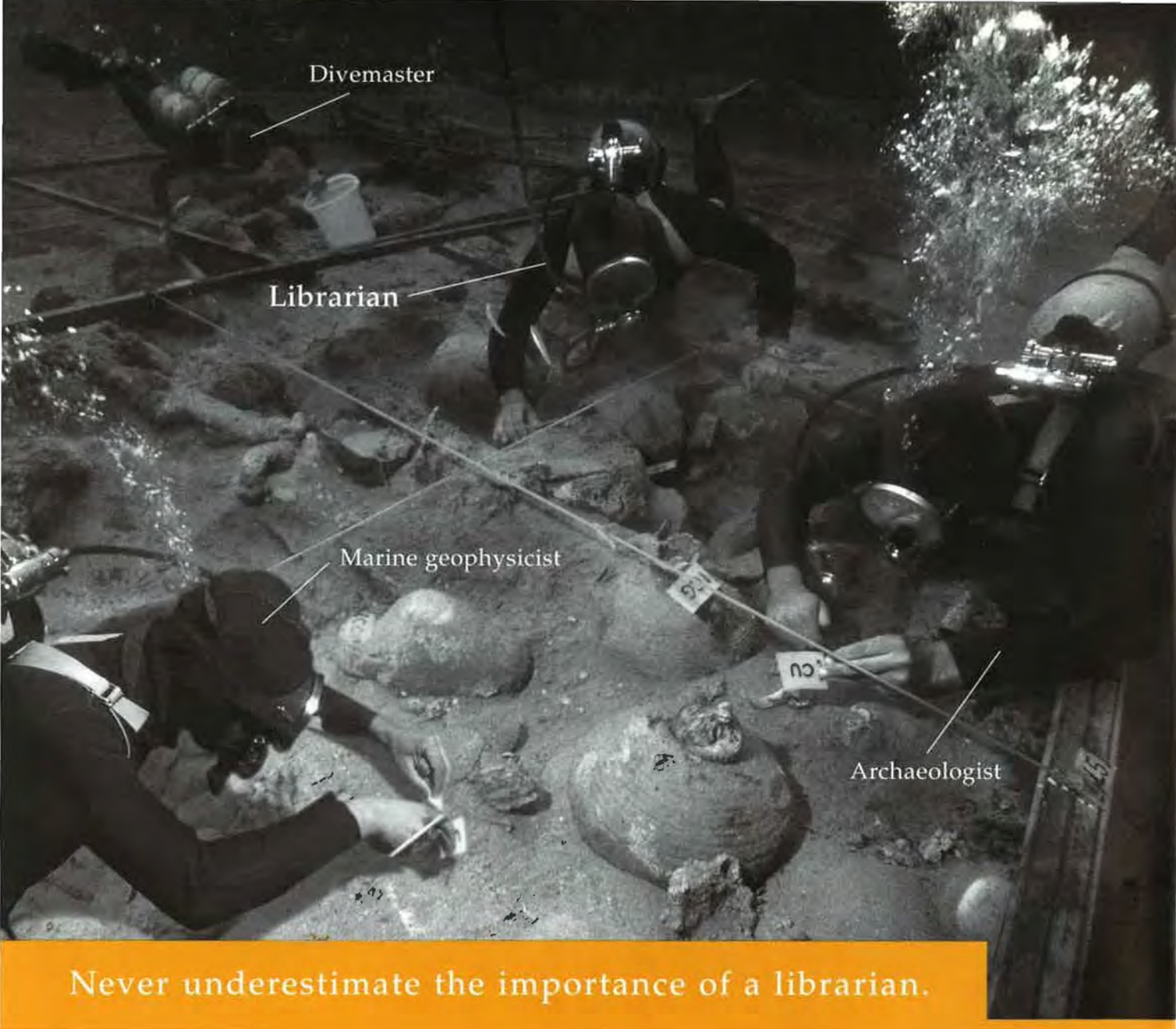

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U.S. Associations of IFLA Call for Individuals from the U.S. Interested in being Nominated for IFLA President-Elect or IFLA Governing Board

IFLA

Deadline August 1, 2004

The U.S. Associations of IFLA will be coordinating their endorsement of nominees from the U.S. interested in running for IFLA President-elect 2005-2007 or At Large Member of the IFLA Governing Board 2005-2007.

Anyone interested in seeking a nomination needs to send a letter of request, along with a CV or résumé to one of the association Executive Directors by August 1, 2004.

Anyone asking for nomination by the associations after August 1st will not be considered. The U.S. Associations will create a committee to review the requests. Individuals will be interviewed by the committee at IFLA in Buenos Aries.

The Committee will make recommendations to the U.S. Associations as to which individual(s) to nominate. If you have any questions, please contact Janice R. Lachance at janice@sla.org. To obtain more information on IFLA, you may also visit their website at http://ifla.org.

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Features

Columns and Departments

information outlook

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executive outlook

The Future of Special Libraries

Hello colleagues,

I am honored to write my first column for *Information Outlook* as the president of SLA. By the time you read this, we will have just returned from our annual conference in Nashville. If you were able to attend, I hope you enjoyed yourself and learned at least one new thing.

This month's column deals with my perceptions on the future of special libraries. Stephen Abram, president of the Canadian Library Association, wrote an article in *Information Outlook* (Vol. 7 No. 8, August 2003) entitled "The 10 R's Facing Information Professionals in Our Association." I am borrowing one of his Rs - relevancy - to guide me in concluding that the future of our profession is a strong one.

Relevancy

Many of us, myself included, have faced at least one downsizing. As organizations faced downturns in the economy, they were forced to cut costs and to reduce services to just the essentials. Many of us lost our physical collections since they occupied so much square footage – and by the way, everything is available on the Internet! Since our profession had been so tied to a building, we were viewed as non-essential and were downsized.

This climate is beginning to change as we have become smarter in working within the business processes of our organizations. We provide analysis, consultative services, training and education, content management services, and metadata selection services. Janice Lachance, SLA's executive director, has begun meeting with our senior management as she visits chapters around the world to advocate the value of our products and services to these decisionmakers. I intend to do the same when I meet with chapters during my presidential year.

I encourage each of you to review the "Competencies for Information Professionals of the 21st Century, Revised Edition, June 2003" (http://www.sla.org/content/learn/comp2003/index.cfm). The document does an excellent job of identifying the competencies we possess. If each of us integrates these competencies into our current workflow, we will make a difference. Our senior management will view us as essential members of the organization and recognize us for the contributions we make.

A Story

When I see a story that describes the closing of a library, I first check to make sure that the information professionals employed in that library were retained. Physical collections in many organizations are just not valued any longer. Customers want access to journals and books from their desktops, even with all the shortcomings such as archival access, that an organization would rather employ the information professionals to manage the electronic content, provide analysis and research services to specific teams, and train and educate the organization on how to use information effectively.

Here at Millennium Pharmaceuticals Inc. we were forced to downsize our physical collection since the building location for the library was being vacated. After performing an information audit and presenting our recommendations, senior management signed off on moving a more focused and less archival collection to the lounge across the entryway to our cafeteria. We now have a modern-looking facility with sofas, lounge chairs, network connections, and a place where people can meet informally. People are encouraged to bring their morning coffee or lunch into the library. We hold meetings and training sessions in the new facility. We are following the Barnes and Noble sales model and it appears to be working.

We do have a strong future ahead of us. We just need to adapt to the changes and be assertive in selling our products and services to our organization. So, let's all work together on promoting our profession wherever we can. I ask each of you to send me stories of successful marketing campaigns or situations that looked bleak at first, but then turned out to be the best thing that could have happened. I will highlight as many of your experiences as possible in future columns.

To quote one of my favorite television characters from the program "Star Trek: The Next Generation"'s Captain Jean Luc Picard of the Starship Enterprise:
Make it so!

Ethel Salonen
President

making news

First Health Info Technology Coordinator Will Implement Standards for Records

David J. Brailer has been appointed national health information technology coordinator, a new position at the federal Department of Health and Human Services.

"Health information technology promises huge benefits, and we need to move quickly across many fronts to capture these benefits," HHS Secretary Tommy Thompson said of the appointment. "We need more than a business-as-usual approach."

Thompson also announced several new actions in developing standards:

• HHS and other federal agencies will adopt 15 additional standards agreed to by the Consolidated Health Informatics(CHI) initiative to allow for the electronic exchange of clinical health information across the federal government.

• The medical vocabulary known as SNOMED CT can be downloaded for free for use in the United States through HHS' National Library of Medicine. SNOMED CT, created by the College of American Pathologists, is a key clinical language standard needed for a national health information infrastructure.

• With HHS support, the voluntary international health standards-setting organization known as Health Level 7 has approved a functional model and standards for the electronic health record. The model is a significant step toward establishing nationwide guidelines for electronic health records.

According to HHS, these actions move the nation closer to a national, interoperable health information infrastructure that would allow quick, reliable, and secure access to information needed for patient care, while protecting patient privacy. Such a system would allow a doctor or healthcare provider to access an always-up-to-date electronic health record of a patient who has agreed to be part of the system, regardless of when and where the patient receives care.

President Bush has established a national goal of assuring that most Americans have electronic health records within 10 years.

One of Brailer's first tasks will be to study options to create incentives in Medicare and other HHS programs to encourage the private sector to adopt interoperable electronic health records. It is estimated that a national health information network can save about $140 billion per year through improved care and reduced duplication of medical tests.

In addition, the new office will work closely with the other HHS offices responsible for medical privacy and security regulations to ensure these efforts continue to secure and protect individually identifiable health information. The office will prepare recommendations on methods to assure that the interoperable health information technology appropriately addresses privacy and security issues, such as appropriate authorization, authentication, and encryption of data that is being transmitted over the Internet.

Brailer is a senior fellow at Health Technology Center in San Francisco, where he has advised various regional and national efforts on IT and health information exchange. He previously served for 10 years as chairman and CEO of CareScience Inc., a healthcare management companies. While at CareScience, Brailer designed and oversaw the development of the health information exchange technology implemented in Santa Barbara County, CA.

Brailer holds doctoral degrees in both medicine and economics.

As part of the CHI initiative, HHS and the other federal departments that deliver healthcare services – the Departments of Defense and Veterans Affairs – are working with other federal agencies to identify appropriate, existing data standards and to endorse them for use across the federal health care sector.

The 15 new standards build on the set of five standards adopted in March 2003. The new standards agreed to by federal agencies will be used as agencies develop and implement new information technology systems.

The CHI initiative is part of the eGov Initiatives, which includes a cross-government effort to develop a federal health architecture that would encompass the CHI standards, as well as compatible software and business systems to promote efficient, effective communication to improve quality of care.

Standards

The specific new standards are:

• Health Level 7 (HL7) vocabulary standards for demographic information, units of measure, immunizations, and clinical encounters, and HL7's Clinical Document Architecture standard for text-based reports.

• The College of American Pathologists Systematized Nomenclature of Medicine Clinical Terms (SNOMED CT) for laboratory result contents, non-laboratory interventions and procedures, anatomy, diagnosis and problems, and nursing. HHS is making SNOMED-CT available for use in the United States at no charge to users.

• Laboratory Logical Observation Identifier Name Codes (LOINC) to standardize the electronic exchange of laboratory test orders and drug label section headers.

• The Health Insurance Portability and Accountability Act (HIPAA) transactions and code sets for electronic exchange of health related information to perform billing or administrative functions. These are the same standards now required under HIPAA for health plans, healthcare clearinghouses and those healthcare providers who engage in certain electronic transactions.

• A set of federal terminologies related to medications, including the Food and Drug Administration's names and codes for ingredients, manufactured dosage forms, drug products and medication packages, the National Library of Medicine's RxNORM for describing clinical drugs, and the Veterans Administration's National Drug File Reference Terminology (NDF-RT) for specific drug classifications.

• The Human Gene Nomenclature (HUGN) for exchanging information regarding the role of genes in biomedical research in the federal health sector.

• The Environmental Protection Agency's Substance Registry System for non-medicinal chemicals of importance to healthcare.

Medical Vocabulary

HHS also announced that SNOMED CT, is now available for download as part of the National Library of Medicine's Unified Medical Language System Metathesaurus at http://umlsinfo.nlm.nih.gov. The vocabulary is available free for anyone in the United States. Users must register via the Web for a free license before downloading the data or requesting a copy on DVD.

With terms for more than 300,000 current medical concepts, the standardized system has been recognized as the world's most comprehensive clinical terminology database available. With its free availability within the United States, it is now possible for healthcare providers, hospitals, insurance companies, public health departments, medical research facilities and others to easily incorporate this uniform terminology system into their information systems.

More information about HHS' efforts to promote health IT is available at http://www.hhs.gov/news/press/2004pres/20040427a.html.

Survey finds lack of "e-records" policies

Nearly half of American companies haven't adopted records retention policies for e-mail and other electronic documents, despite the issues raised about corporate record-keeping over the past two years.

In a new survey of 2,200 records managers, 47 percent said their company does not include electronic records in its retention and destruction schedules. Nearly six in 10

companies (59 percent) reported having no formal policy concerning the retention of e-mail.

Some 46 percent of companies reported having no system for placing holds on records in the event of pending litigation or a regulatory investigation - leaving open the possibly that records critical to a legal matter could be destroyed. Moreover, 65 percent said their company's hold order policy, if one existed, did not include electronic records.

The ARMA International and AIIM International survey was conducted by Cohasset Associates Inc. in September 2003. ARMA International and AIIM International are professional associations serving the records and information management profession.

Unlike paper records being overseen by certified records managers, the information technology department handles oversight for electronic records in 71 percent of companies, the survey found. Two-thirds of records managers surveyed said their colleagues might be computer experts, but they don't understand the concept of "life cycle management."

For a full report on the electronic records survey, see: www.merresource.com/whitepapers/survey.htm.

Magnetic Database 'Rocks' the World

The U.S. Geological Survey and NASA have teamed up to create one of the most complete databases of magnetic properties of Earth's rocks ever assembled.

Satellite data of Earth's magnetic field combined with rock magnetic data collected on the ground will provide a more complete insight into Earth's geology, gravity, and magnetism. The information in this database will allow more realistic interpretations of satellite magnetic data and will contribute to a variety of studies such as groundwater, mineral resource, and earthquake hazard investigations.

The new database will be available to the public via the Internet. A clickable map of the world will include locations where detailed rock magnetic data were collected. Open access to specific properties and locations of each type of rock will allow researchers to more accurately model Earth's gravity and magnetic fields. This should improve our understanding of the structure and development of Earth's crust.

The combined databases form one of the most complete datasets of magnetic properties of Earth's rocks, the USGS says. The database contains rock densities and magnetic properties for some 17,000 entries. Many of these data were taken from surface outcrops in the Western U.S. and span a broad range of rock types.

The NASA database contains magnetic properties of 19,000 samples. The samples come from all over the world including the Ukrainian and Baltic Shields, Kamchatka, the Ural Mountains and Iceland. Some 2,000 Icelandic rocks in the database have helped explain the source of unusual magnetic activity in Iceland recorded by both Magsat and German Champ missions. Database records revealed the magnetic shifts in Iceland were caused by ferrobasalts, analogues to Martian rocks. As researchers continue to study Mars, these findings may shed light on Mars' geology.

Satellites have detected magnetic signals in the upper layer of the Earth, called the lithosphere.

With over 36,000 rock samples, the combined database will help researchers determine the origin of these signals in Earth's crust.

Researchers collect rock specimens and data in a variety of ways. Research vessels are used to dredge samples from the ocean floor. Ships may also carry huge deep-sea drills that pull cores of sediment and rock from the beneath the ocean.

The database also includes rock magnetic data from the deepest borehole in the world. It was drilled in northern Russia in the Baltic Shield. Researchers drilled and extracted cores from the continental crust as deep as 7.62 miles.

On land, scientists may collect samples from rock outcrops. When rocks have been exposed to the elements, researchers use small hand drills to uncover fresh material under a rock's surface.

Satellites that have detected unexplained variations in Earth's magnetic field include NASA's Magsat and Polar Orbiting Geophysical Observatory, Germany's Champ satellite, and the Danish Oersted satellite.

For more information and images see: http://www.gsfc.nasa.gov/topstory/2004/0517magnet.html.

E-data Replaces Medicus Index

The printed Index Medicus, started by John Shaw Billings in 1879 and published for 125 consecutive years, will cease at the end of 2004. Once an indispensable tool for health professionals and librarians, it is now a seldom-used alternative to PubMed® and other Internet-based products that contain the database from which Index Medicus has been generated for nearly 40 years.

For years, Index Medicus has been invaluable in medical care, education, and research, but use of the printed index declined slowly once MEDLINE® became available in 1971. Subscriptions to Index Medicus declined more noticeably

in the 1980s with the introduction of end-user searching and dropped precipitously once MEDLINE was available free on the Internet in 1997.

In 2000, NLM® ceased publication of the annual Cumulated Index Medicus. The same year, the Government Printing Office recognized PubMed as the definitive permanent source of MEDLINE data and no longer required depository libraries to retain the printed Index Medicus.

By 2003, the number of subscribers to the monthly Index Medicus fell to 155. Demand for the publication is almost non-existent in developing countries with limited access to the Internet.

The lack of use of Index Medicus is a natural result of free worldwide availability of more complete, current, and easily searched electronic versions of the NLM's authoritative indexing data.

Although the printed Index Medicus will cease, journals recommended for inclusion in MEDLINE by NLM's journal selection advisory committee will still be distinguishable from other journals in PubMed. NLM will continue to produce the annual "printed MeSH" tool and also expects to continue the printed *List of Journals Indexed in Index Medicus*, perhaps expanding its coverage to all indexed MEDLINE journal titles. NLM also will continue its indexing practice of starring MeSH terms as the main point of an article. Even though the printed Index Medicus (which lists citations under their starred headings only) will cease, there is still a need to designate the main points of an article for online retrieval.

For those users who do not wish to rely solely on PubMed access to NLM indexing data, there are numerous other Internet versions of MEDLINE as well as several commercial CD products. The MEDLINE data are available free under a license agreement should any company wish to publish a printed product.

For more information see: publicinfo@nlm.nih.gov.

Corrections

An article on the 60th anniversary of EBSCO in the May issue of *Information Outlook* contained two errors. The name of the company was spelled "Ebsco." In fact, EBSCO is an acronym and should have been used in all capital letters. The name of the founder's wife should have been spelled Alys Robinson Stephens.

In the June issue, the article on Bonnie Carroll's receipt of the Federal 100 Award erroneously listed Kent Smith as director of the National Library of Medicine. Smith is the deputy director; the director is Donald A. B. Lindberg.

SLA I

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SLA Launches Campaign to Expand Professional Learning

SLA has launched a $1 million fundraising initiative to support the transformation of its Professional Development Center by 2007.

Inspired by SLA President Ethel Salonen - and announced at the SLA 2004 annual conference in Nashville - the SLA Annual Campaign for Professional Development will provide funding for capital projects that will lower the barriers learning opportunities for information professionals as the association transforms itself into a premier provider of continuing professional education services.

"This is an extraordinary opportunity that will catapult SLA into a new role as a leading professional educator among professional societies," said SLA Executive Director Janice R. Lachance. "This campaign represents the core of our values and serves to strengthen SLA and the status of the global community of information professionals."

The SLA Annual Campaign for Professional Development builds on the Professional Development Committee's strategy to deliver a new competencies-based training system, a new online learning center, and more robust learning opportunities at the SLA Annual Conference and throughout the year.

"The vision is that by 2007, the SLA Professional Development Center will be known as one of the leading continuing education programs and will be seen as the ideal model for support of lifelong learning and continuous professional skills development," SLA President Salonen (Millennium Pharmaceuticals, Cambridge, Massachusetts) said. "The campaign is a perfect way to ensure that SLA meets the profession's continuing education needs without raising dues or placing undue burdens on corporate partners and learning participants."

The funds raised from this campaign will support:

• Development of the SLA LearnCenter, an online system that will provide information professionals with access to courses and content in a variety of subject areas. The SLA LearnCenter will give information professionals the opportunity to learn where and when they choose, collaborate with others in multiple languages, and engage other learners to expand their perspectives.

• Acquisition of three distinct course libraries that will include more than 200 courses focusing on core areas of professional and executive development.

• Translation of a focused set of courses, particularly into French and Spanish.

• Conversion of a variety of SLA learning experiences into self-paced online courses.

• Enhancement of the Virtual Learning Series and the Career Development Series to meet competencies-based goals by improving content and hiring professional instructors.

• Purchase of an Internet-based video and audio delivery system for all live and recorded SLA learning experiences.

• Contract with internationally recognized field experts to deliver a balanced set of learning experiences that meet the needs of SLA's diverse audience.

• Construction of an Internet studio at SLA's Global Headquarters for the purpose of producing live and recorded learning experiences for SLA members.

Details on the campaign are available on the SLA Web site at www.sla.org/give.

Board Approves New CI Division

A new division for SLA members interested in competitive intelligence received approval from board of directors at the 2004 annual conference in Nashville.

The new Competitive Intelligence Division replaces the Competitive Intelligence Section of the Leadership and Management Division. All members of the existing section were granted membership in both sections until their next dues renewal.

The Competitive Intelligence Section was created in 2002 and has nearly 150 members. More than double the required 100 members petitioned the board to create the new division.

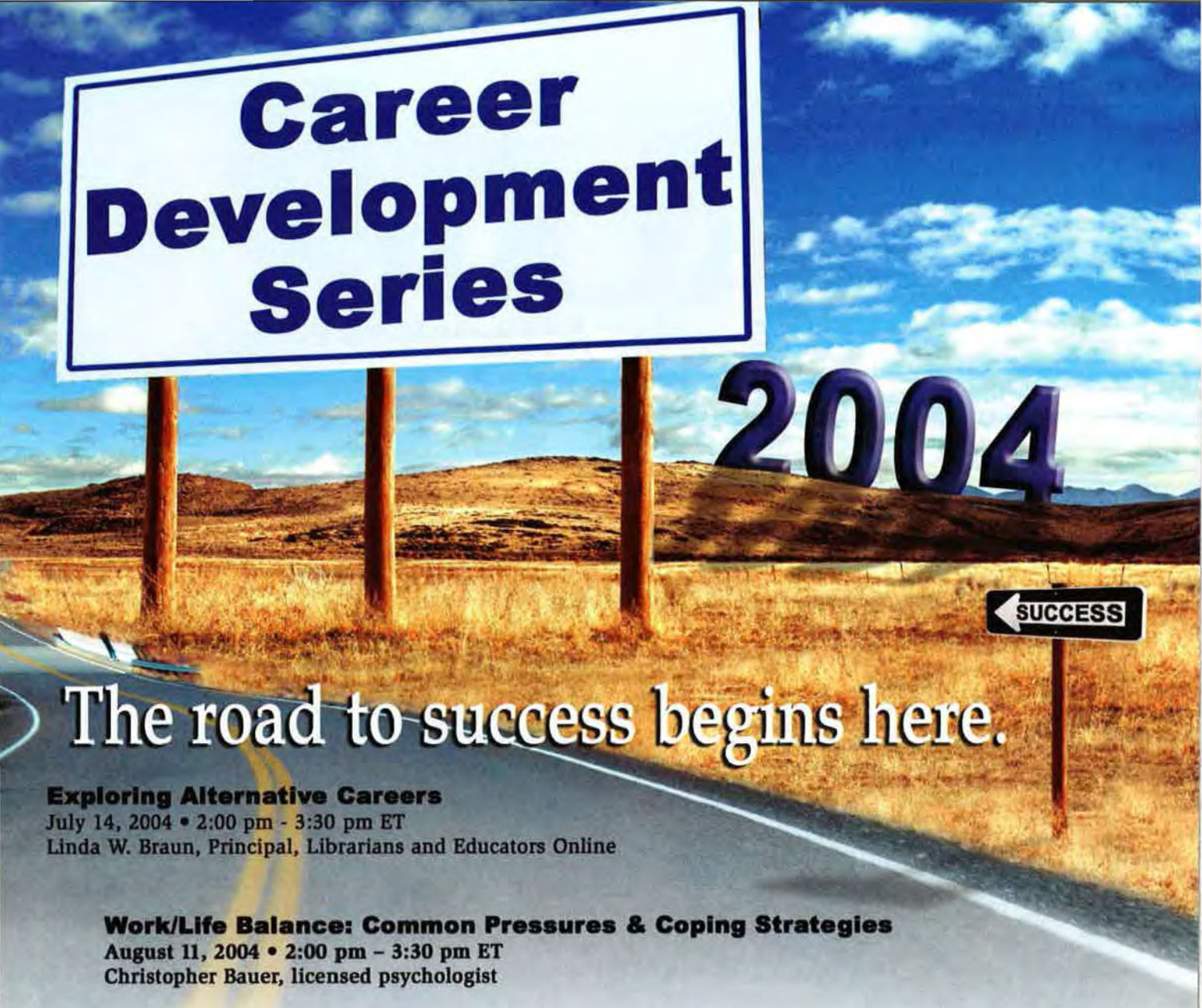
The division encompasses all aspects of competitive intelligence, including planning, identifying decision makers' intelligence needs, collecting and analyzing information, disseminating intelligence products and services, evaluating intelligence activities, promoting intelligence services among a client base, and additional industry-specific issues.

Neutral on Open Access

In other action, the board approved a statement asserting SLA's neutral position on open access.

The background report to the board noted that SLA "has traditionally stood slightly apart from other organizations on access to information and pricing. Many groups call for free access to information, whereas SLA has traditionally supported accessible information, but not necessarily free..."

"Because SLA represents a balanced cross-section of the industry, an opinion should call for collaboration toward a mutually beneficial information infrastructure that will provide equity for publishers and users alike. SLA's statement is intended to solidify our neutral position on this subject, and to encourage others to collaborate."



Exploring Alternative Careers
July 14, 2004 • 2:00 pm - 3:30 pm ET
Linda W. Braun, Principal, Librarians and Educators Online

Work/Life Balance: Common Pressures & Coping Strategies
August 11, 2004 • 2:00 pm – 3:30 pm ET
Christopher Bauer, licensed psychologist

Evaluating Your Strengths and Identifying Areas for Further Learning
September 8, 2004 • 2:00 pm – 3:30 pm ET
Barbara M. Robinson, Robinson & Associates

Negotiating: Strategies and Techniques
October 6, 2004 • 2:00 pm – 3:30 pm ET
Tom Morris, CMF, Professional Speaker, Morris Associates, Inc.

Getting Ready for the Job Search
October 27, 2004 • 2:00 pm – 3:30 pm ET
Marshall Brown, Certified Professional Co-Active Coach (CPCC), Marshall Brown & Associates

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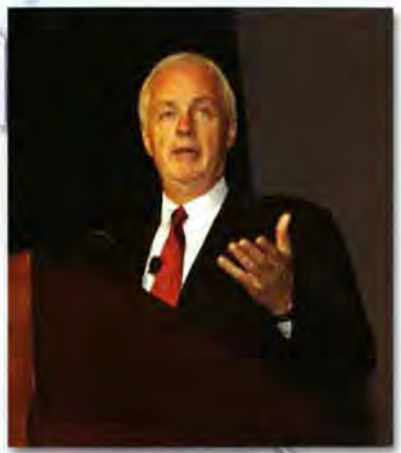
SLA, Outsell Set New Member Benefits



SLA and Outsell Inc., a research and advisory firm focused exclusively on the information industry, have launched a new partnership to deliver a range of services and programs to SLA members.

Under the agreement - announced at the SLA 2004 annual conference in Nashville - SLA members will receive several new benefits, including:

- A Web-based version of Outsell's Ready-SetSM Needs Assessment survey for SLA members to deploy within their organizations. SLA members who participate will receive a Benchmark Summary of their industry and may purchase a report with their specific company results.

- A series of research initiatives to capture data and recommendations for SLA members in areas of interest including content management, career development, and the ROI of information services.

- A training course on essentials for SLA information professionals.

- Discounts on selected Outsell content such as Briefings and e-briefsSM, user studies, reports, and the Outsell Taxonomy.

- SLA member-only Web access to free summaries of Outsell reports at www.SLA.org.

"This is a great day for SLA," said SLA Executive Director Janice Lachance. "Our community has respected Outsell's work for years, and now the association and our membership will experience a great partnership with the most recognized group of analysts in the information industry."

"Everyone at Outsell is thrilled to be working even more closely with SLA," said Greg Chagaris, co-founder of Outsell. "This partnership has grown from both organizations' unrelenting focus on making information professionals in corporations, academic institutions, and governments more successful. Together, we will serve the community of SLA members even better."

For more information on Outsell, see www.outsellinc.com.

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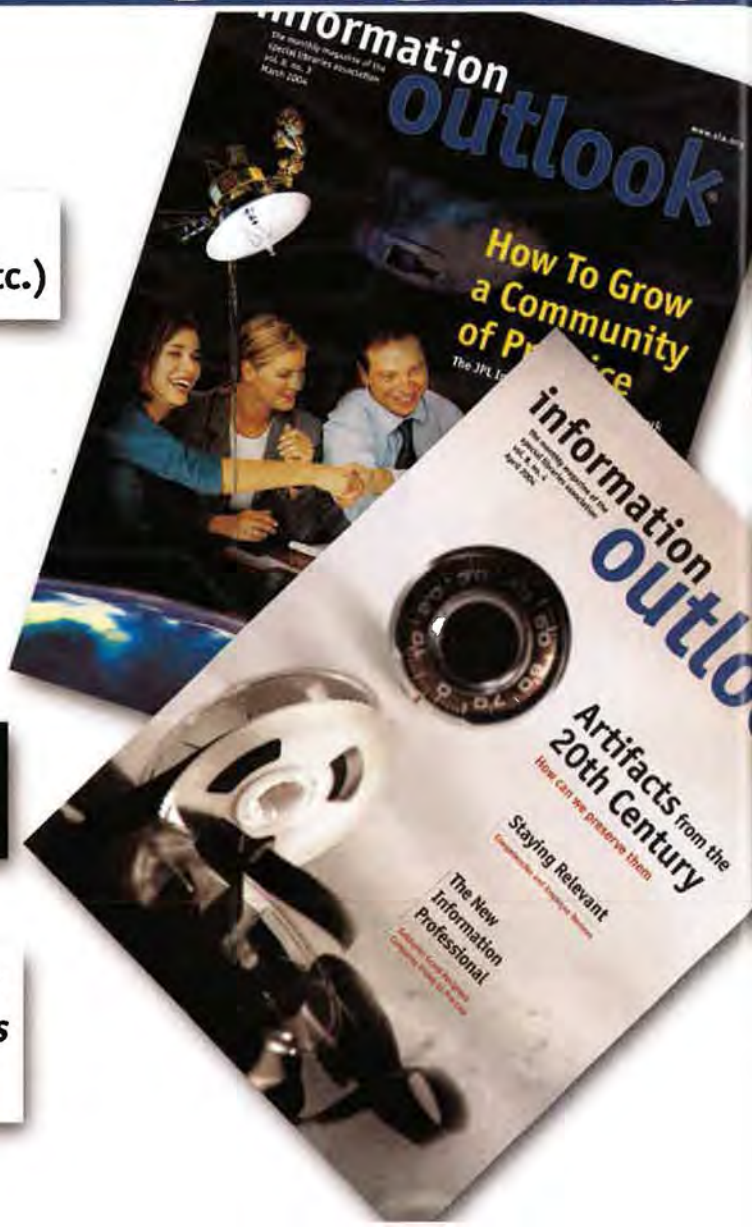

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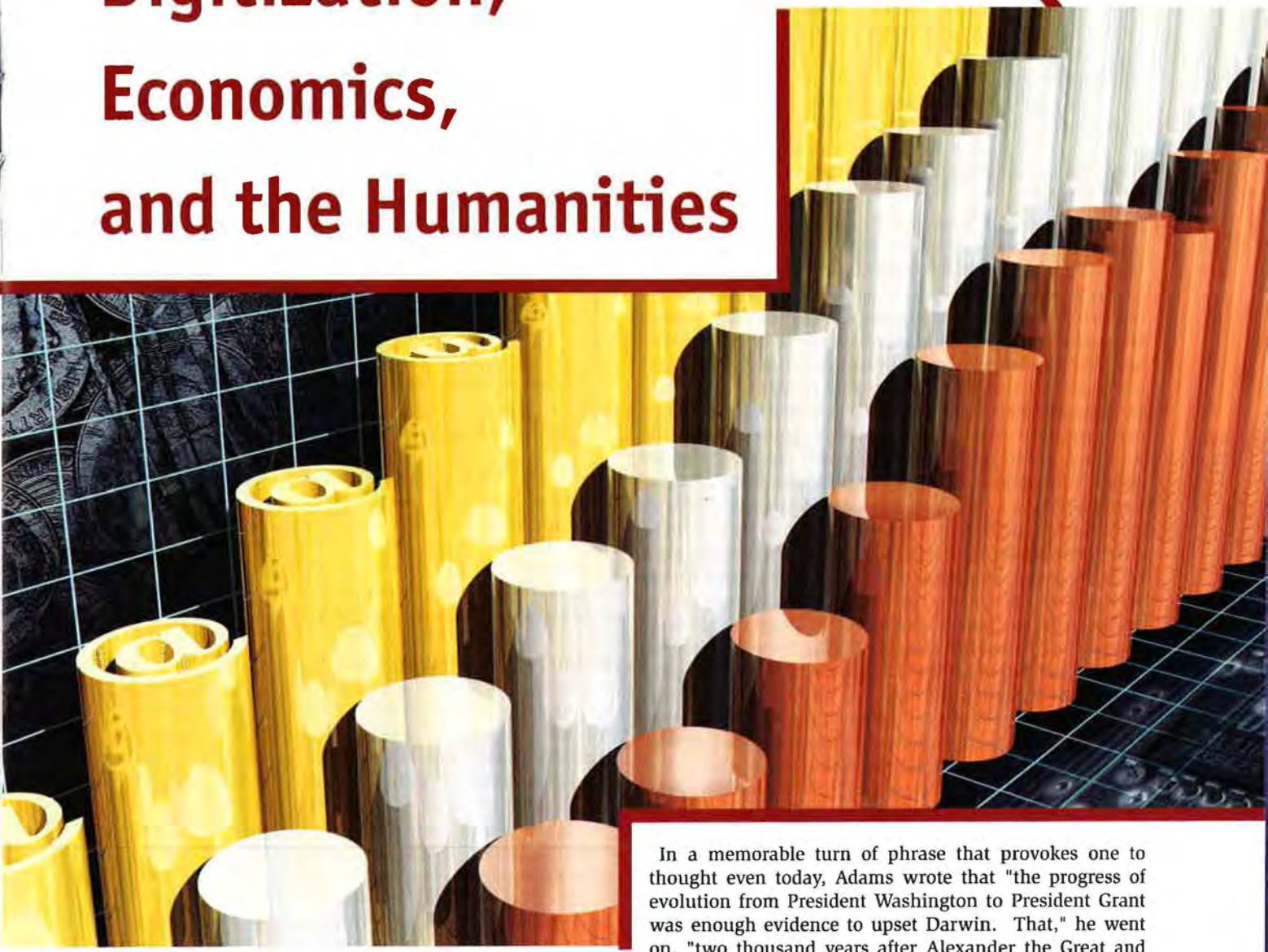

By Peter B. Kaufman

In his memoir/autobiography, *The Education of Henry Adams*, historian and novelist Henry Adams wrote at length about the theory of evolution that was being propagated after the Civil War "convulsing society," as he put it by British naturalist Charles Darwin. But reflecting upon the qualities of the sitting president at the time, Ulysses S. Grant, who was in the White House when Darwin returned home on the Beagle and was getting his results out, Adams expressed his doubts about whether the theory of evolution truly could hold.

Contact: Greg Jones or Anne Steinberg
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212-687-8999
gjones@kitchenpr.com

In a memorable turn of phrase that provokes one to thought even today, Adams wrote that "the progress of evolution from President Washington to President Grant was enough evidence to upset Darwin. That," he went on, "two thousand years after Alexander the Great and Julius Caesar, a man like Grant should be called – and should actually and truly be – the highest product of the most advanced evolution, made evolution ludicrous."[1]

This is a remarkably good prompt for us to consider exactly where digital technologies and processes have put us – and by us, I mean librarians, scholars, publishers, production entities, curators – on the evolutionary ladder of communication, and of scholarly communication in particular. One can think of the papers of the American presidents (or their wives – see: http://www.vcdh.virginia.edu/madison/index.html) now being converted across the country into TEI Light XML, or of the Booker T.

Washington papers already digitized by the History Cooperative of the University of Illinois Press (see: http://www.historycooperative.org/btw/index.html).

As one charts, for example, in American history, the progress/natural selection of media from any of the thousands of canonical texts that have been published in book form, at a cost of goods, say, of $3 or $4 per volume for modern paper, printing, and binding, through the cost of microfilming these documents ... to the shape some of our relatives have taken on screen in the form of documentary television at a cost of, say, $300,000 per hour ... to the form the same information may now take in online display and the true costs of that, are we really moving in the direction that nature intended?

Listening to the Newspaper

The first point to make in any such consideration or analysis is that there is real worldwide demand for the products stewarded by those in libraries, museums, archives, and historical societies today– indeed, growing demand.[2] The defining no-going-back moment for me was six years ago when I was reading a *New York Times* article about the architecture of the Kremlin. At the bottom of the piece, where usually the Times invites its readers to support the Fresh Air Fund in New York, was a squib that read: "To hear the bells of the Kremlin, visit our website at www.nytimes.com."

Today, as remarkable perhaps, when one is listening to NPR, the radio announcer will say, "To see photos of the exhibit we have been discussing, visit us online at www.npr.org." Likewise, the book is the best medium ever invented – compact, portable, reusable, convenient-with a table of contents and an index and sometimes footnotes and appendices of documents and lists of illustrations. Ten years ago, who among us would have imagined using some of these navigational features – a table of contents, for example – to watch a movie at home?

Cultural heritage institutions have to plan for this new demand and heretofore unorthodox, cross-platform distribution – to put photos on the radio, footnotes in the films, and bells in the newspaper. On the library and museum front, with text, images, and sounds galore, that's a true challenge. But the consumer demand – or, to use a softer word, the expectation of people today – is real.

The second point is: Many of the costs by now are quantifiable. If you worked as an acquisitions editor at Simon & Schuster, Penguin, or HarperCollins, or many of the academic and scholarly publishing houses, you'd be able to work with a fairly uniform profit-and-loss analysis document where the costs of goods sold versus expected revenue, contribution to overhead, and profit would help you determine whether a project is worthwhile according to the success metrics of the book industry (weird as they are). In the overall field of scholarly communication, of course, there's not a kind of cross-industry P&L, and certainly it's hard, sometimes impossible, to do a basic P&L for mission-driven work, where the social good just isn't fungible. But by now there is enough data for us to be able to come up with an almost uniform measurement – like the measurements used in degrees Kelvin, or Fahrenheit, or Watts, or Volts – for the actual cost of physically converting an analog bit in print, in audio, in film, or to a digital byte.

Indeed, if all the conversion data from major institutional digitization projects over the last two or three years were somehow shared and simple measurements designed for it, these unit costs could be determined. "Conversion," as it is called, is a small piece of the overall puzzle of digitization, but with 10 or more years behind us now, its costs can be calculated.

The third point is: Stakeholders in the success of these endeavors at cultural and educational institutions are almost everywhere. It is true that the costs of conversion, say, into XML-enabled files; memory, say, in terms of disk space (a terabyte of memory now costs under $2,000); and computational speed all are dropping; indeed, there are laws now being named for some of this observable cost-reduction velocity. But on the other half of this equation, the number of people involved in this is growing. As OCLC's Brian Lavoie has written,

"The impact of digital information environments has been remarkably universal, extending to industry, government, and the academy; to businesspeople, scientists, engineers, and scholars of the humanities; to the individual in the workplace and the individual in the home.

"Vast quantities of information in digital form – text, images, audio, video, Web, pages, computer programs, databases – are produced, exchanged, and used in a variety of settings, for myriad purposes. These diverse applications of digital technology rest on a common foundation of shared benefits, including powerful search and retrieval capabilities, network delivery, perfect duplication, and interoperability."[3]

That "common foundation of shared benefits" is incredibly important – and true. In 2004, the Mellon-Foundation-supported American Council of Learned Societies national Commission on Cyberinfrastructure in the Humanities and Social Sciences, is conducting a wholesale investigation of who uses what and who will need what for problem-solving and information dissemination in the disciplines that concern most of us (see more at: http://www.acls.org/cyberinfrastructure/cyber.htm). This group is taking as a given that the cyberinfrastructure needed for humanities work is as important as that sought by and given to scientists. The external stakeholders in this process are being defined broadly, as Lavoie has done, and together will help in arguing for and maintaining sustainability with government, private, institutional, and tax-exempt funding.

Exorcizing the Analog

Marshaling all stakeholders includes those within, not only outside, a given institution planning a major digitization effort. When I first started at Innodata Isogen, working with libraries, museums, archives, historical societies, I would visit leading institutions. All the people involved in digitization will have gotten together in a conference room; they will tell you what their particular issues are with respect to digitization. Then, if you're a good listener, you'll hear it – it starts with a sigh. You have everybody in the room assembled, and everybody's had their say, and then there'll be a sigh – that sigh says, "Never…. It'll never work." Then somebody else sniffs or growls in agreement…. And then it opens up – slowly a group moan begins to rise in the room, rising into a wail of biblical dimension. People start fainting and gnashing their teeth and banging their heads on the table and pulling their hair out in clumps, wild – eyed like in *Where the Wild Things Are.*

We've had these sessions at a variety of university libraries, in particular, with all kinds of stakeholders in these processes, from librarians through to the faculty through the administration, sometimes involving the press, even the radio and television stations at these universities. We've done that at several places in the Midwest, at the Smithsonian Institution and its libraries in DC, and at the Metropolitan Museum of Art in New York. I know sometimes a project leader has assembled the group mischievously using the pretext of our visit, to get all the possible stakeholders in a project together in the room for the first time. But at the end of these meetings, when people are wiping the sweat off their foreheads and janitors are repairing the walls – it's the equivalent of an intervention, it really is, or an exorcism, exorcising the analog – someone will calmly come up to me and say, "That was really helpful for us."

The fourth point involves how to institutionalize collaboration across new boundaries. It's been said to me that the digital library of the future will be built not by the Digital Library Federation (DLF) but by a company like Elsevier. That may be a little bold, but it's certainly true that commercial as well as noncommercial entities should be included in planning and collaboration. They, we, you have much to learn from each other – what people at Thomson Gale have done with university archives, University of Michigan Libraries with commercial vendors overseas, the University of Illinois Press with Innodata Isogen, or NewsBank with the American Antiquarian Society.

Commercial procedures and business metrics can be helpful to nonprofits in this process. Today there are real resources available for cultural heritage institutions planning new initiatives, whether it's the wonderful guide to good practices that NINCH published in 2003 (http://www.nyu.edu/its/humanities/ninchguide/), the DLF's helpful materials (http://www.diglib.org/publications.htm), or Liz Bishoff and Nancy Allen's instructions, "Business Planning for Cultural Heritage Institutions," published at the start of 2004 by the Council on Library and Information Resources.[4] Yet regrettably, these otherwise excellent guides and reports have been written with little true business input. The public sector and the private sector should work together, rather than at cross-purposes; the for-profit and not-for-profit lessons parts of this universe should not be divided. The cyberinfrastructure will be built and populated by all of us.

Innodata Isogen, of course, works in these many areas, whether it's our work in systems design for prestigious museums, training at the Getty Museum and Research Institute, conversion for the Smithsonian Institution Libraries (see: http://www.sil.si.edu/DigitalCollections/usexex/), or applying EAD to collections in libraries like University of Virginia's Health Sciences Library (see: http://yellowfever.lib.virginia.edu). The company believes it has an obligation to work with information scientists and information science tools like extensible markup language, to work with what's variously termed "humanities computing" or "cultural heritage informatics," to help everyone produce and present good work.

Henry Adams, who was a romantic and a member of the early American intelligentsia, believed that two unstoppable forces were propelling America and the world forward: religion, which he termed "the virgin", symbolized at a cathedral in the North of France, and industrialization, which he called the dynamo, symbolized by what he saw at the 1893 Chicago Exposition. A Boston Brahmin with the neuroses of Woody Allen, Adams tried to correlate these values of the 12th and the 20th centuries in some kind of Keplerian or

Newtonian formula to predict the pace of human progress. But he couldn't do it.

I do not doubt for a minute that were he here today, he would add a third force. We can call it the digital revolution, telecommunications, or what the Russians call "informatization." He would try to come up with a formula for the effect of this force on human progress as well. A historian, he'd know that 900 years ago in China, or 600 years ago in Germany, people were getting together and worrying about the economics of putting ink on paper, or in Egypt thousands of years ago, the economics of carving hieroglyphs into stone. Giant buildings around Rockefeller Center bear the inscriptions of McGraw-Hill, Hearst, Simon & Schuster, and Time, now Time Warner. These are monuments to success and profitability, but we have yet to come to a full set of answers to that Chinese or German or Egyptian question. Businesses have been built around ink-on-paper, but there is no failsafe formula for translating information or media processes into sound economic processes. Perhaps all that can be gained in this digital age is a sense of sounder processes. Even old Henry Adams would be comfortable with that formula.

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[1] Henry Adams, *The Education of Henry Adams* (Boston: Houghton Mifflin, 1946 [original edition 1918], p. 266.

[2] Tobias Higbie, "Artisans in the Age of Digital Fordism? A View from the Newberry," presentation at the Innodata Isogen - Newberry Library symposium, "The Economics of Digitization: Toward Sustainability and Institutional Collaboration," May 2004 (see: www.innodata-isogen.com/events).

[3] Brian F. Lavoie, "Technology Watch Report: The Open Archival Information System Reference Model: Introductory Guide" (Dublin, Ohio: OCLC, January 2004), p. 1.

[4] Liz Bishoff and Nancy Allen, "Business Planning for Cultural Heritage Institutions" (Washington: Council on Library and Information Resources, January 2004).

Concept Search Technology Goes Beyond Keywords

By Renaud Laplanche, Joaquin Delgado, and Matt Turck

Two people use the same term to describe an object or a concept less than 20 percent of the time, a problem known as "term mismatch." (Furnas, 1987)

A fundamental relevance issue comes from term mismatch. The problem entails more severe consequences for short queries than for long, elaborate queries. As queries get longer, there are more chances for important terms to co-occur in the query and the relevant documents. As more untrained people search for information, search engine queries are becoming shorter and less elaborate, typically limited to one or two words.

Concept searches solve the term mismatch problem in the sense that a concept search will return documents that relate to the same concept as the query word, irrespective of the specific word chosen by the user and the specific words in the documents. At the same time, concept searches contribute to the other fundamental goal of information retrieval systems: increasing coverage.

By returning all documents that relate to the same concept, a concept search tremendously decreases the risk of missing important documents that do not contain the exact word selected by the user but pertain to the same topic.

Two techniques can be used to perform concept searches:

• Manual Techniques. These techniques use customized thesauri and semantic networks. When a user types in a word, the system can automatically include in the query other words that belong to

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The amount of information flowing over corporate intranets has grown 200 times between 1998 and 2003. Last year U.S. corporations exchanged an average of 4 billion e-mails every day. There are 6 billion pages available on the Internet, growing at a rate of 8 million new pages per day.

The Gartner Group estimates that professionals now spend 30 percent of their time searching, retrieving, and managing information. The research company IDC found that a 2,000-employee corporation can save up to $30 million per year by reducing the time employees spend trying to find information and duplicating existing documents.

In various attempts to solve the information overload issue, search engines have evolved since their inception in 1994, progressing from simple term matching to link analysis techniques (such as IBM's Clever Project and Google) and relevance feedback.

Search engines have now entered their third generation, and research efforts continue to be aimed at increasing coverage and relevance. The most successful attempts toward attaining this goal currently reside in technologies offering "concept" searches, which let the user find not only documents that contain a specific word or phrase but also documents that relate to the same concept.

the same node of the semantic network. The main drawbacks of these techniques are the high cost of building, adapting, and maintaining those thesauri through human intervention and high language dependency. On the other hand, these techniques offer considerable customization and personalization capabilities.

• Mathematical Models/Machine Learning Techniques. These techniques use latent semantic indexing, Bayesian methods, and neural networks-based context vectors. These fully automated methods try to discover inherent underlying associations among words extracted from the data collection, building a query interpretation model. This model acts like a "black box" containing internal associations. The learned model is used to facilitate fuzzy searching on the resulting patterns. The main issue associated with these techniques is the lack of transparency and lack of user control over the query and results. When users obtain a result set that they find inadequate, they are left with no explanation of the inadequacy or way to improve the query or result set. Their only option is to enter another query, hoping the next trial will yield more relevant documents. Additionally, these techniques tend to "overfit" the data, expanding queries to more generic concepts to the detriment of precision in favor of better recall.

Search methodologies that incorporate both of these methods are key: a hybrid technique that is based on automatic query expansion, combining the advantage of requiring no human input with the flexibility and transparency of manual techniques.

This article explains the process of automatically generating a concept network (i.e., a network of words connected to each other, the strength of such connection depending on their degree of belonging to the same concept).

This process involves the selection of target terms (the roots of the concept network) followed by a three-step process for selecting candidate terms for query expansion, using local divergence analysis, global analysis, and contextual similarity metrics. Once this concept network has been built, a user query containing a target term can be expanded to all terms that belong to the same concept, as those terms appear in the concept network.

The concept network (and the query expansion proposed to the user) can be edited at any time, like a manually created thesaurus. A purely statistical technology cannot offer editing of the concept network and query expansion. Among other benefits, the ability of each user to edit the query expansion and save such edits offers considerable personalization capabilities.

The concept network evolves constantly to incorporate new terms and new meanings of older terms and to reflect rapidly changing term associations constant addition and deletion of documents.

Building a Concept Network

To build a concept network that can be used to generate query expansion, it is necessary to create a process that uses local and global analysis of co-occurrence patterns, as well as contextual analysis. This whole process runs offline based on the document set and does not require user input. It starts with the selection of the most relevant target terms, which constitute the roots of the concept network.

Preliminary Step: Selection of Target Terms. To avoid undesired terms and to optimize the computation requirements, it's important to limit the universe of target terms to the most N frequent keywords and keyword phrases. This does not limit the query expansion to these initial target terms, but rather sets the seed terms upon which the concept network will be based.

Step 1: Local Divergence Analysis. A local divergence analysis method is used on a subset of documents and a set of features (index words, phrases) that best describe the subset. It is performed by analyzing the frequency of the features within this subset in comparison with their frequencies within the entire collection. The subset typically consists of the top N documents returned by a keyword search. It is a useful approximation to model the documents relevant to the information request that generated the query.

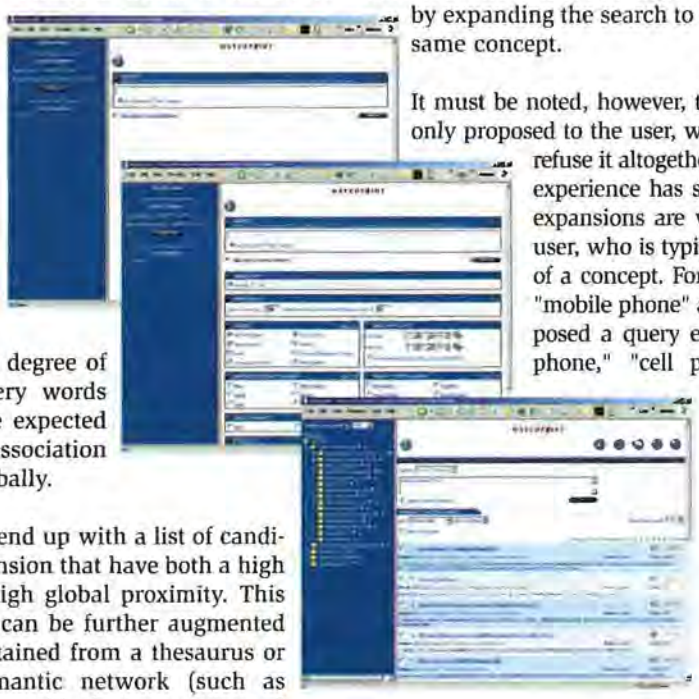
The basic idea is to select candidate words from the subset of documents by computing the likelihood for the candidate words to be generated by the query model (the set of words that constitute the query). For example, very generic words that have high occurrence probabilities will have a low local divergence score.

The use of a clarity score-based metric for a candidate term quantifies the relevance of the top N documents to the candidate term. It assigns a value to the probability that the candidate term belongs to the query model (i.e., the original target term that is being expanded). This measure is computed as a divergence of the candidate term's probability of belonging to the top N documents with respect to the candidate term's probability of belonging to the collection. The set of candidate terms that have a higher value for the clarity score-based metric will be a good set of features for computing co-occurrence statistics (dice coefficient) globally, since they have been selected based on some notion of global occurrence patterns as well.

This local analysis is a useful first step to generate an initial list of candidate terms for query expansion but is not sufficient, as candidate terms might have a high divergence score at a local level but may not be generally associated with the query term in the entire document collection. This limitation will be eliminated by a global analysis.

Step 2: Global Reinforcement (Global Analysis of Selected Features). The locally selected words may have significant associations with the query words by virtue of occurring in the local context of the query words within the local subset. These associations may, however, be local maxima and may not be significant globally. Hence, a global analysis must be performed on the locally selected words to quantify their associations with the query words in the entire collection.

This analysis can be done using the dice coefficient, which measures the strength of co-occurrence between the query words and the candidate words in the entire document collection. The measure assigns higher scores to words that occur in proximity to the query words. This computation is computationally expensive but is performed only on a set of words that have been filtered and selected through the local divergence analysis. These words already have some degree of association with the query words locally and hence can be expected to have some degree of association with the query words globally.



At this point, one should end up with a list of candidate terms for query expansion that have both a high divergence score and a high global proximity. This list of "good" candidates can be further augmented with correlated words obtained from a thesaurus or a publicly available semantic network (such as WordNet) before the last, critical step: contextual analysis.

Step 3: Contextual Similarity Analysis. The words that occur in the global context of a target term can be fairly assumed to contain words that are associated with such target term but still lack some strongly associated words that may not often be found in proximity. Therefore, it is useful to discover words that may appear in a similar context. A contextual similarity analysis is also useful to achieve word disambiguation.

The first step consists of analyzing the context of each candidate term. This is done recursively by repeating the local context analysis and the global reinforcement, using candidate terms as the query. The second step consists of comparing the context of candidate terms and the context of the target terms and quantifying the similarity. This similarity measure is used to produce the final ordered list of candidates for query expansion, which will be incorporated into the concept network.

The same contextual analysis is used to cluster candidate terms into different senses and facilitate word disambiguation.

Personalized Query Expansion

Once a concept network has been built, a user query containing a target term can be expanded to all terms that belong to the same concept as those terms appear in the concept network. This query expansion solves the term mismatch problem, as users will be able to identify and retrieve the most relevant documents even when the word they use to express their query is different from the word the document author chose to express the same concept. Furthermore, query expansion tremendously decreases the risk of missing the most relevant document, by expanding the search to all words that relate to the same concept.

It must be noted, however, that the query expansion is only proposed to the user, who can accept it altogether, refuse it altogether, or modify the query. Our experience has shown that proposed query expansions are very often modified by the user, who is typically interested only in part of a concept. For example, a user typing in "mobile phone" as a query term will be proposed a query expansion such as "cellular phone," "cell phone," "portable phone," "GSM," "i-mode," and "CDMA." This user will typically be interested only in one or two mobile phone standards, and may choose, for example, to delete "GSM."

This powerful feature (the ability to edit a proposed query expansion) cannot be made available by purely statistical technology, which acts as a black box and doesn't have the capability to display the query expansion. Furthermore, users can save the meaning they have ascribed to a concept when editing the query expansion. An analyst who covers the European mobile market, for example, may want to exclude "CDMA" from the concept of "mobile phone" permanently (or until further notice) because that standard is not used in Europe.

As the volume of information available to professionals continues to grow exponentially, corporations must offer their employees more powerful search tools that tolerate errors and approximations (term mismatch) and that can adapt over time to their specific information needs (personalized query expansion).

Competencies for Information Professionals of the 21st Century

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Managing Information Services
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New System Improves Management of Grant Information

By Eric Zimmerman, Yosef Mackler, and Debra Cohen
Bar-Ilan University, Israel

At Bar-Ilan University, the Research Authority(RA) serves as the administrative unit responsible for the administration of research grants. The Research Authority locates funding sources, develops proposals, approves proposals for submission, negotiates contracts, and ensures financial and scientific compliance of grants awarded. The staff of the Research Authority disseminate funding opportunities and other research-related matters to faculty members from all disciplines in the sciences and the humanities in a timely and targeted fashion.

During the past several years, the RA designed and implemented an electronic message system to communicate with the university faculty. In 1995, we introduced a mainframe-based system, drawn from the university payroll database. This system enabled us to communicate with the entire 1,200-member faculty.

While most faculty members welcomed this technological advance, some researchers objected to receiving unwanted or irrelevant messages (too much "noise"). In response, one year later, we refined the system by dividing our researcher community into three faculty distribution lists. This policy change reduced the amount of information overload. In concrete terms, this change meant that our physicists no longer received funding opportunity notices about research programs in philosophy. However, after conducting a faculty survey and an internal office review, we realized that we needed to further refine our communication system. We found that some faculty members filtered or deleted seemingly unwanted RA mail, and a few others asked to be removed from the list(s) altogether.

To ensure more precise targeting of e-mails – that is, to make sure researchers received the most relevant postings to their field of interest – we designed a messaging system based on defined discipline – oriented keywords. We were then faced with developing the size and scope of the keyword-controlled vocabulary, ensuring that messages do not fall between the cracks, and equipping the RA administrators who filter and generate the e-mail messages with the requisite academic knowledgeable to understand the keyword terminology.

In September 2000, with the above issues settled, we launched the KeyMail system. Now, researchers will receive only those messages targeted to the keywords they supplied to the RA.

It is clear that we are accomplishing our goals of targeting messages and reducing "noise." Researchers who provided keywords have seen a 50 percent reduction in e-mails, on average. The more precise the term(s) chosen by the researchers, the fewer messages they receive.

The RA staff recently analyzed the issue of providing relevant funding opportunity information to targeted faculty members. This review was conducted as part of an overall examination of the way university knowledge is managed (in particular, research information) and new business-critical information is sought, produced, and disseminated.

Technological innovation is changing the inner workings of the modern university. At their best, technological advancements may allow a workgroup to work in less time, automate routine tasks, and simplify others, as well as allow employees to reevaluate their work priorities and devote more time to tasks they find rewarding.

Streamlining the Processes

Research Authority staff realized that a high standard of operation must be established at the Research Authority, one that would streamline "business" processes and serve as an example of excellence to other university departments. The idea was to analyze the needs of its target community and incorporate modern technology to confront the challenges.

The RA had to join the rapidly advancing communication and information revolution. Incorporating a proven ICT (information and communication technology) infrastructure would enable the Research Authority staff to:

- Perform tasks better as a team, by sharing information;
- Make efficient use of online databases and the Internet;
- Sandardize reports, documentation, and applications by using advanced programs and techniques (e.g., templates and macros in word processors);
- Make efficient use of time, eliminating unproductive work hours;
- Produce constantly updated business information on demand; and
- Create an information management system of the universitywide research, which would include bibliographic material of researchers, information on academic and research departments, pertinent material on foundations and research granting agencies worldwide, and information on Bar-Ilan research contacts (projects, meetings, sabbaticals, publications, fellowships). This would allow the RA to match researchers to foundations and grant opportunities through the use of a standardized set of discipline-specific keywords.

This information system would serve the RA and the university by identifying appropriate data sources to address specific information needs, such as finding local and international research partners and locating funding opportunities.

The benefits we expected to realize by embarking on this information and technology revolution were the reduction of complexity and the elimination of redundancy and waste. We anticipated a shift from an emphasis on quantity to one of quality; from decisionmaking based on opinion and conjecture to one based on data analysis and shared experiences; from detection of problems to the prevention of them. This is research information management.

External research funding is a major enterprise at Bar-Ilan, as it is in all research universities worldwide. Recently, this enterprise has grown in volume and complexity. The university's one-thousand-plus researchers obtain funding from international sources, as global partnerships are today's "way of the world." To help the university researcher identify funding sources, locate partners, and secure funding, in the early 1990s, the Research Authority began overhauling and modernizing the computer and information systems it needs for its administrative and financial operations. The office incorporated the most advanced hardware, and an external software house was contracted to develop a unique, stand-alone PC-based database program for the "Pre-Award" grants section.

Integrating Systems

Despite these advances, the system was not designed to integrate with other office functions, such as data dissemination and financial management functions. Nor was it linked to other university information systems. As we approached the 21st century, staff members proposed a strategic vision and plan to assess the overall operations of the RA, how the various office functions interplay with each other, and how the RA's information system operates within the university framework.

We proposed a reengineering of research grant administration and a new understanding of the information needs of our primary constituents: researchers, administrators, and external (casual) users. The RA staff anticipated that this systems analysis and needs assessment, coupled with an information audit, would spark creative debate within the university, which would explain the value of the proposed system. Indeed, owing to forward-thinking and a willingness to invest the necessary time, the RA was incorporated in the innovative universitywide enterprise resource planning program during first-quarter 2001.

The initial proposal of the RA staff was based on fundamental principles of knowledge management(KM). KM offers an opportunity to generate a positive change in the campus work culture: how the administrative and academic faculties collectively teach, learn, perform research, and administer services. In brief, it was felt that in the 21st century, this new KM-based model would make the university more competitive in securing external competitive research funding and in attracting top students, faculty members, and researchers.

What was the business reason for reengineering the system? The antiquated record keeping, disparate information systems, and near total lack of shared knowledge and data could not adequately meet the demands of electronic commerce in finance, reporting, and grant administration.

In addition, Bar-Ilan University, like all major institutions of higher education, supports a diverse and broad array of opinions, attitudes, and cultures among its faculty and student bodies. In such institutional settings, divergent units sacrifice the collective good of the institution to their own self-interests. This activity often creates cost overruns and duplication of services. Furthermore, the RAstaff identified the following obstacles to a unified information system.

We were faced with an ocean of data that required the staff to determine how they would:
1. Distill this data into usable information, and
2. Transfer this information to the user groups. (Herein lies the problem, dealt with in this paper.)

We were faced with duplication of stored information that wastes precious time, human capital, and money. Such duplication annoys the user groups who may be required to complete the same form or respond to the same data queries from more than one university unit.

Often, systems work at cross-purposes to each other, even within the same department, as in the grant administration and finance sections of the RA. Drawing on KM's emphasis on improved learning and innovation, the new system's goals were to:

- Improve processes and simplify administrative procedures;
- Adopt a knowledge culture that supports employee innovation, productivity, and information sharing across academic, financial, and administrative units;
- Establish a data infrastructure to support research administration processes; and
- Capture and share data to support decentralized decisionmaking.

What We Were Thinking

The following principles and ideas (philosophical and technical) further supported the thinking of the RA:

Knowledge Management Policy: There was a defined need for an effective knowledge management policy, one that could be integrated with a university-wide policy. Whatever policy, or set of policies, was adopted, the system had to be substantial, authoritative, up-to-date, and reliable. Better information makes better decisions.

Information Sharing: There was a distinct lack of information sharing. An example was the RA and the fundraising departments both units possessed data on foundations.

Electronic Publishing: The new system should allow for the easy publication of research results in a digital and hard copy environment. The ability to effectively disseminate research results is one of the requirements for a successful proposal.

Virtual Community: By instituting a dynamic Web environment for the university, it was hoped that a virtual community of researchers and research administrators would be developed and sustained, to the benefit of both groups.

Digital Library: A key component of the information system would be the development of a digital library. This repository would include proposal, project, and publication abstracts, as well as scientific progress reports of funded research projects. This would add to the quantity and quality of searchable information.

Code of Best Practice: It was agreed that the RA should develop a best practice code for developing and maintaining this system. As a start, it was felt that the office should follow the guidelines of the Code of Good Practice (as developed by euroCRIS, a nonprofit association that aims to be the internationally recognized point of reference for all matters relating to Current Research Information Systems). As part of this work, the office would need to define performance indicators, identify improvements in business processes, identify trends and technologies, and assess its information policy.

Knowledge Management: Knowledge management, or KM, is the managing, integrating, identifying, capturing, retrieving, sharing, and evaluating of information assets. It is collective brainpower. As such, KM is a discipline. Information assets of the university include databases, records, documents, e-mails, policies, procedures, and tacit knowledge. The success of the university rests on its ability to harness its knowledge. The university must know what it is that it already knows. The objective must be to have a clear, efficient means by which information is gathered, stored, handled, and used. The university also needs a solid knowledge infrastructure to enhance its competency in an increasingly competitive world of grantsmanship and research and development.

Information is a resource: As such, it needs management, and it must be a valued part of the university infrastructure. Information strategy is not concerned with technology; it is information-driven. Information awareness must lie at heart of university thinking. As regards the storing and reuse of university knowledge, the goal is to add value by turning the raw data into information and transforming the information into knowledge. This is wisdom. KM is a team-enabling technology. It is designed to support and strengthen communication and information sharing. KM rests on the goodwill among information workers. KM workers must be willing to constantly learn and share; teamwork is the key. This relates to the creation of the virtual community.

Information Sharing: It must be determined what information is available for sharing. The information made available must be of high quality: accurate, current, complete, and consistent. Knowledge management, in this respect, perhaps is the ultimate step in collaborative computing.

User Expectations: The task of developing a research information system becomes increasingly difficult, as user and operator expectations are constantly rising. New technologies whet the appetite for more. Information requirements are becoming more complex, as users realize the potential. As a result there is a greater demand on e-mail and other delivery systems, database systems, and Web systems. The RA must be responsive to user diversity within the university. Different population segments have different user needs: power and novice users, occasional and power users, scientific or administrative users, and so forth. The information system operators need to identify the information needs of the research community to support business and planning needs.

Portability: To be cost-effective for the university, the system developed should be portable to other academic and administrative units.

Behavior Change: E-mail has become the tool of just-in-case philosophy. In other words, people are fed information that they may or may not need. The KeyMail program, the subject of the case study, seeks to effect a change in this attitude.

Accessibility: A system that may be integrated enterprise, wide will create greater awareness of information and accessibility to this knowledge in a timely manner.

Conclusion

Based on a faculty survey and an inter-office review, the RA decided to increase the precision of its targeted e-mail messages to faculty members. A messaging system based on defined discipline-oriented keywords was designed. In developing this system, we discovered the need to incorporate an improved ICT infrastructure. This infrastructure would enable us to create a university-wide research information management system fully integrated with other systems, such as financing and auditing. By incorporating the RA into this university-wide infrastructure, we expected to reap the following benefits: reduce complexity, redundancy, and waste; increase decision making efficiency based on data analysis and shared experiences; and prevent problems.

The RA's proposal won university administration acceptance. Using principles of KM, information sharing, and code of best practice, the RA is being integrated into the university's ERP program.

References

Code of Good Practice, euroCRIS, http://www.eurocris.org.

Valuating Information Intangibles

Measuring the Bottom Line Contribution of Librarians and Information Professionals

by Frank H. Portugal, Ph. D

A determination of the bottom line value of libraries and information centers has proven difficult due to the intangible nature of the value and the use of archaic accounting systems that for the most part focus on tangible or physical assets rather than intangible ones. The problem is that the intangible value of libraries and information centers may be orders of magnitude greater than their tangible value. To overcome some of these measurement difficulties this workbook presents four different approaches to the intangible valuation of information resources.

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http://www.internet-librarian.com

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copyright corner

Making Backup Copies Violates Law

Under what conditions may a librarian make a backup copy of a copyrighted work?

This is a frequently asked question, especially regarding DVDs and music CDs. The Copyright Act permits a librarian to make a backup copy of some types of works, and it allows individuals to make backup copies of some works for personal use. It does not, however, provide a broad permission for libraries to create backups of literary, musical or audiovisual works.

Everyone, including libraries, may make a backup copy of a computer program, defined in the statute as "...a set of statements or instructions to be used directly or indirectly in a computer to bring about a particular result."

When the Copyright Act was being debated, Congress identified two matters that were too difficult to deal with directly, so it appointed the National Commission on New Technological Uses of Copyrighted Works (CONTU) to do so. These two issues were interlibrary loan, and computer programs and databases. CONTU recommended the very first amendment to the 1976 Act, which was a new section, 117, enacted in 1980.

The owner of a copy of a computer program may make another copy of that program in two instances, according to section 117. The first is when it is an essential step to use that program in conjunction with a computer. This might mean that in order to use the program, it must be copied to one's hard drive. In the 1980s it meant that one might have had to make a copy in order to convert the program from one computer language to another or to convert the disk size so that the program could be used in a computer. The second instance is for archival purposes. So, a backup copy is permitted.

Unfortunately, section 117 applies only to computer programs. However, after the 1998 Digital Millennium Copyright Act that amended the copyright statute, defeating any technological control that controls access to a computer program in order to make even a legitimate backup copy is infringement. Computer games almost always have copy protection built in, and defeating the controls would be infringement. DVDs are encrypted, another type of technological control.

Many librarians have long assumed that it was permissible to make backup copies of videotapes. They are easily damaged, and the library may need a master copy from which it could duplicate additional copies if the circulating copy became damaged. DVDs have proven to be even more fragile than videotapes; so librarians have felt even more pressure to create a master copy as a backup. Moreover, the technology to duplicate DVDs is ubiquitous. Making backups of audiovisual works would be the equivalent of making a photocopy or digital copy of every book in the library. Few would entertain the idea that this was non-infringing conduct.

Sections 108(b)-(c) permit a library to reproduce both published and unpublished works for preservation purposes, but only if certain conditions are met. Replacement of published works (such as purchased audiovisual works) is allowed for purposes of replacing a lost, damaged, stolen, deteriorating or obsolete copy, but only after the library first makes a reasonable effort to find an unused replacement at a fair price. So a replacement copy may be made when conditions are met, but creating a backup copy is not permitted under this section.

If a library wants to make backup copies of DVDs or videotapes to prevent loss from damage, it should obtain a license to do so. Some video producers will sell single copies of a work along with a license to make up to a certain number of copies of the original. This is referred to as the duplication right. It was often used by school districts that purchase videos and the right to make a copy for each school library in the district. The license to duplicate is less expensive than buying individual copies of the video for each library. In addition to the duplication right, libraries may also acquire a license to make backup copies of DVDs.

Under a 1992 amendment, the Audio Home Recording Act, consumers are permitted to make unlimited private use of legally purchased music and other media content stored on CD. In essence, consumers are free to copy the material so long as they do not distribute the copies to others. Consumers may make cassette copies of CDs to play in their car or copy favorite CDs onto MP3 players. They are not free to distribute the copies to others, even by giving them away. This is the limitation libraries face - they distribute the materials to others by lending them and thus are not treated as individual consumers.

Often there is new technology advertised to facilitate making backup copies of various types of media. During the videogame era, a device was introduced that copied the game cartridges, allegedly to prevent "accidental erasure." There are now devices for copying DVDs to prevent accidental destruction. A recent California case addressed this issue.

In 321 Studios v. MGM Studios (307 F. Supp. 2d 1085(N.D. Cal. 2004), the

federal district court held a company that created tools to use in making backup copies of DVDs liable for copyright infringement under the anti-circumvention provision. Moreover, the court ordered 321 Studios to stop distributing these products immediately.

Certainly, such devices have substantial non-infringing use – to view and duplicate works in the public domain and make fair uses. The court refused to recognize damage to these legal uses and stated, "...the downstream uses of the software by the customers of 321, whether legal or illegal, are not relevant to determining whether 321 itself is violating the statute." The popularity of the 321 software demonstrates how serious the matter is for DVD owners – especially those with children.

In 2002, bills such as the Digital Media Consumer Rights Act, H.R. 5544, were introduced, that among other things would create a fair use exception to the DMCA's bans on circumvention. Moreover, it would not be a violation to manufacture, distribute, or make non-infringing use of a hardware or software product capable of enabling significant non-infringing use of a copyrighted work, and thus would allow consumers to make backup copies of their media. It is unclear, however, whether this bill would permit libraries to create backup copies of DVDs since a library's use is not a personal use.

Even more directly, U.S. Rep. Zoe Lofgren (D-CA) re-introduced a bill in 2003 that would ensure consumers' rights to make digital copies of music, movies, and books for their own personal use. Called the Balance Act, H.R. 1056 would establish consumers' rights in the digital world to make backup copies of digital works for use on other devices such as the car stereo or a portable MP3 player. Further it would protect consumers who bypass technological locks to view a DVD movie on their laptops. Again, it is unclear whether it would apply to libraries.

Librarians should be aware that just because backup copies benefit the library, or because making them is easy or technologically possible, it likely constitutes copyright infringement. Libraries can acquire a license to do this, and if having backup copies of works other than computer programs is important to that library, it should consider a license.

information trends

Information Wants to be Free - Bullcookies!

Our work and value have been attacked on many levels, but nothing has been more damaging that the misquote of Stewart Brand that "Information wants to be free!" This phrase has served as a clarion call to devalue information, information work, and librarianship – which are anything but free. Here's the real quote:

At the first Hackers' Conference in 1984, Brand put his finger on a central paradox about digital information that is causing us so much trouble today. "On the one hand," Brand said, "information wants to be expensive, because it's so valuable. The right information in the right place just changes your life. On the other hand, information wants to be free because the cost of getting it out is getting lower and lower all the time. So you have these two fighting against each other."

This quote is lifted from page 120 of David Bollier's must-read book, *Silent Theft: The Private Plunder of our Common Wealth* (Routledge 2003). Bollier lifted it from the *Whole Earth Review* May 1985, p. 49. You can also see a history of this quote's attribution at "Information Wants To Be Free" at http://www.anu.edu.au/people/Roger.Clarke/II/IWtbF.html.

Aha!!! I said to myself as I read this in David's book (not free) on a plane (not free) on my way to a conference (not free). There it is. It's just like that old misquote: "Those who don't know history are doomed to repeat it." What Santayana actually wrote in *Reason in Common* Sense was, "Those who forget the past are condemned to repeat it".. As Voltaire said, "Common sense is not so common."

Why is this quote so compelling – even as a misquote – and why did it get such currency in the modern age? Remember that a hacker's conference in 1984 was pretty much on-the-edge.

Free means many things. It is especially vital to the practice of librarianship.

"Free" in its narrowest meaning can mean "without cost." And often from the user's perspective, library services are without cost. More important, it means freedom to think, freedom to research, freedom to write, freedom of expression – those values central to our professional beliefs. "Free" also can mean a kind of shorthand for democracy and democratic principles. The democratization of information has been a movement since at least the invention of the printing press and publishing. "Free" can be used in the context of free time – freedom from obligation, duties, and responsibilities. Libraries' recreational collections certainly fall into this "free" space. Finally, "free" can mean unconstrained – running free, thinking free, having the free rights of citizenship.

Making information free is very powerful because of all those other meanings. If there's anyone who knows that information wants to be expensive, it has to be librarians. We manage this to ensure cost-effectiveness.

Unfettered

My opinion is that the best meaning of "free" is "unfettered."

There are many ways to unfetter information and even more ways to fetter it. Cost is only one of the ways in which we can deal with the fettering of information. By buying information at the enterprise level in our organizations we unfetter it and make it free, de facto, to the end user. It isn't free of cost by any means, but it will appear free to the user. Therefore, the user does not need to leap the hurdle that is the "buy" decision to use critical information that can underpin his or her work.

We can also fetter information by making it costly or adding hurdles of payments to obtain the information transaction we want. Sometimes fettering information with a cost improves the end-user experience – free movies can be overcrowded, free information can be rough and poorly edited, free can cause quality lapses because you get what you pay for. Therefore, some users prefer to pay to get the assurance of a better information experience and to remove the risk of additional processing fetters.

So, in what other ways is information unfettered?

Libraries unfetter information – make it flow freely– by:

Good information design – Increasing simplicity and assuring use of good interface principles makes the acquisition of information more satisfying. If we don't simplify it, it can be pretty rough. We can all name information systems that were abusive – some of the first generation Boolean online systems were far too complex to teach to typical end-users.

Making it easier to find – Users hate to search like us; they just want to find. By using simple tools like federated search and adopting appropriate standards like Z39.50 we make life for users much easier. Federated search removes the barrier to not knowing where to search in the first place. And, especially by adopting tools like link resolvers that employ the OpenURL standard, we make exploring the information ocean seamless when content is identified and full text links become simple and seamless.

Pruning information – Our collection development and content identification skills are non-pareil. Our adherence to selecting high-quality information to meet our users' real needs and to avoid duplication, false paths, and false drops generates real value. Just searching the groups of content that match the domain I am searching is very powerful.

Aligning information with user profiles – Again, through great selection we ensure that the information is appropriate for our users – we don't provide jargon-laden information to kids and neophytes when plain language is needed. We design our Web sites, portals, and learning objects to align with our users' literacy, subject, and learning needs and styles.

Targeting information to specific user communities – We can push information. We know (mostly) how not to drown our folks. We have a fine editor's and selector's eye. We push information intelligently and can use the latest styles of alerts, RSS, and blogs – and still write a powerful paper note or e-mail to alert our users to special items.

Customizing information to individual needs and projects – Our best feature is that we can improve the quality of a question before we answer. This is the personal research touch that is based in deep knowledge of the reference interview. Search engines seek answers in haste. As the saying goes, haste makes waste and it is, by definition, shallow. How shallow can it be to decide quality by just popularity? How high school!

Removing barriers to information – We know that increasing required actions between the user and content reduces satisfaction and productivity. Therefore, we have become experts in reducing non-value-added barriers. We know that IP authentication makes a seamless experience to paid content. We know that we can remove barriers by avoiding digital rights management or copyright fees. We can assure legal access through invisible patron-level authentication systems, too.

Many of us are challenged by management, users, and researchers who love the Google™ experience. Google has unfettered access for them on many levels. It's free – NOT. Advertisers pay it for and the advertisers are Google's primary clients – not the searcher. A good searcher experience that delivers high numbers of visits and searches – of the right type – generates more ads and therefore more Google revenue.

We likely do need to give unto Google what is Google's. Google gives an amazingly good experience in four of the five "W" questions: who, what, where and when. We know this as well as end-users. What libraries and librarians do better is with the why and the how. When our collections and skills revolve around a central theme, industry, topic, or exploration, we excel at answering and building users' and learners' knowledge in the why and the how. That's why we find libraries represented so strongly in industries where innovation and creativity are central to success - R&D, advertising, consulting, auditing, for example.

Libraries and librarians unfetter information in many ways. By doing so we improve the user experience, improve learning, improve knowledge acquisition, and inform decision-making. We need to stop worrying about Google competition since it doesn't even begin to compete with us on a core level. We need to start differentiating library services from weak experiences like Google.

In the wisdom that is an e-mail signature, I once read (and can't find the first author) this quote:

"Those who know how will always be employed. They will be working for those who know why."

This column contains the personal perspectives of Stephen Abram, MLS, and does not necessarily represent the opinions or positions of Sirsi Corporation or SLA. Products are not endorsed or recommended for your personal situation and are shown here as useful ideas or places to investigate or explore. Stephen would love to hear from you at stephen.abram@sirsi.com.

information management

New Plans for SLA's Management Documents Collection

By John R. Latham

The Management Documents Collection (MDC), contributed by SLA members, was a group of sample documents on various topics such as library brochures and marketing materials, floor plans, user surveys, and acquisition and collection development polices.

The Information Center in the new HQ in Alexandria will not be continuing the loan of these folders, but will be making samples available electronically wherever possible. We are working on scanning these materials as well as some of the up-to-date samples in the current folders.

We probably won't be scanning the 1978 acquisition policy for the Norman D. Weiner Professional Library or the government agency information center floor plan with space for the card catalog and vertical files, which may lack currency.

Reading through the SLA discussion lists I am always impressed by how willingly members share resources on so many topics, and this is exactly what was done with the MDC. The Information Center should now be capturing these resources electronically for the benefit of other members. The success of this updated resource will depend on our members' willingness to share their examples. We will, of course, make sure that sample policies or other documents are edited to remove company references where appropriate. It would be helpful to have documents representing the following:

- Chapter/division survey instruments
- Content management policies
- Floor plans/space management
- General library policies
- Library brochures and marketing materials
- Library newsletters
- Mission statements/strategic plans
- ROI calculators
- User survey instruments

If anyone has examples of these resources or ideas for other topics, please send them to John Latham or Carolyn Sosnowski at resources@sla.org. If the resources are not available electronically we will be happy to scan them into PDF files. We will also be promoting this new project via the discussion lists, the hub of SLA's global community.

As I mentioned in the April issue, interlibrary loans will be limited to the loan of SLA videos to chapters, divisions, and other units for training or other events.

SLA Publications Go Electronic

All current SLA publications are available in PDF format and print. The latest conversions are *Towards Electronic Journals*, Donald King and Carol Tenopir's industry standard on the subject, and the fourth edition of *Special Libraries and Information Centers: An Introductory Text* by Ellis Mount and Renée Massoud.

The other publications that have been available in PDF and print are *Valuating Information Intangibles: Measuring the Bottom Line Contribution of Librarians and Information Professionals*, and *On-the-Job Research: How Usable Are Corporate Research Intranets?* The *2004 SLA Salary Survey* will be available in PDF in early fall.

All SLA publications can be purchased through SLA's Online Marketplace at www.sla.org/merchandise.

Experience of the Month

It is a salutary reminder of the dangers of copyright infringement when one reads in Laura Gassaway's May Copyright Corner that Legg Mason, the global financial services company, was fined $19 million for violating copyright law by posting a copyrighted newsletter to their intranet.

With so much information being delivered electronically by aggregators and other vendors, it is not only important to check that the mode of disseminating the information to staff complies with your specific copyright arrangements, but also that the staff are aware and reminded regularly of what they are allowed to do with the information. It is easy to assume that because your company has purchased the information, you can e-mail it to someone else within or without the organization and not infringe copyright.

John R. Latham is the director of the SLA Information Center. He can be reached at john@sla.org

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