

# **Integrating @ Internet Speed: Revisiting 2002**

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Integrating at Internet Speed -- the theme of the NFAIS Annual Conference of 2002 - neatly encompasses the exhilaration and exhaustion experienced by members of the information community this past year.

Professionals were wrestling with transition in terms of users, financial models, and technological infrastructure. Throughout the year, content providers, new and old, continued to reorganize and re-engineer in order to meet the expectations of users, clients, business partners, and investors. Even as NFAIS members negotiated on standards and worked for better implementations of technology in networked environments, progress was slowed by a lack of societal agreement as to what were appropriate practices within those environments. However, industry analysts will generally agree on the following:

- **Competition and Transition Key Issues For Information Providers**

The industry continues in a highly competitive state of transition - a state that will likely be prolonged over the next three to five years. Such competition will continue to drive consolidation within the industry, potentially resulting in the demise of smaller providers and niche resources in the interests of achieving greater economies of scale for the wider community. We anticipate continued merger and acquisition activities by larger organizations, seeking to achieve "critical mass" of content as well as stabilization of access models and platforms. For the next twelve months, the industry will continue to experience an economic slowdown, due to the constraints of library budgets and the overall health of the economy.

- **User Demands, Attitudes, Behaviors and Expectations Are Key Driver**

Users simply want to accomplish a task and need information tools and resources to successfully do so. More accustomed to a diffused online environment, today's researchers expect these tools and resources to have high levels of functionality with minimal barriers to use. They will use whatever tool seems to help them achieve their desire. As a result, content providers (and that label applies to libraries as well as publishers) continue to emphasize re-engineered products and services that enable users to retrieve and manage information by any means they choose.

- **Ongoing Debate as to the Role, Protection and Use of Content In Networked Society**

Debate will continue as creators of content, information professionals and content providers try to reach some consensus over whether intellectual property in the research community should be treated as a social entitlement or as a commodity. This highly volatile question remains unsettled and will not likely be resolved in the short term, although all participants seem to recognize that the discussion has far-reaching implications for their financial models (whether they be government body, corporation, non-profit or professional society, academic library, etc.). How are content providers and information professionals to deliver information over global networks, educate users on the appropriate boundaries of copyright, avoid electronic piracy, and still achieve a mutually agreeable rate of return on investment?

## **I. Competition and Transition Key Issues for Information Providers**

### **Leveraging Content and Technology**

Welding content and technology together in a successful architecture was a key focus for information providers this year.

ProQuest took the limelight with its efforts to digitize the back files of such periodicals of record as the New York Times, the Wall Street Journal, and the Washington Post. Featured in Wired magazine as well as in the New York Times, the digitization of the material was heralded as "unprecedented". ProQuest described the scope of the initiative in a press release, dated March 1, 2002, as "The ProQuest Historical Newspapers project will encompass newspapers with deep historical value for researchers in various fields, including newspapers that may have ceased publication. The project will be ongoing and will cover hundreds of newspapers in the coming years, including national, regional, and local newspapers, beginning with U.S. papers, and will eventually include newspapers from around the world."

Alexander Street Press, an academic publisher of full-text documents in the humanities, built momentum by the use of semantic indexing to enhance the value of their products. Semantic indexing permits scholars to retrieve answers to highly complex queries from information databases (such as "How did attitudes towards slavery among women on plantations evolve following Reconstruction?") as the individual product database is relational in structure, using multiple, separate interlinked files and multiple fields (perhaps as many as 80 in a single resource) to facilitate retrieval.

For a group of six important STM publishers, including the American Chemical Society, Elsevier Science and the Institute of Electronic and Electrical Engineers (IEEE), the focus was on a font creation project, the Stix Project, "aim[ing] to develop a comprehensive set of fonts for mathematics and other special characters used in Scientific, Technical, and Medical publishing." Announced at the Special Libraries Association meeting in June, the project will facilitate legibility of scientific formulas and symbols in technical documents delivered in electronic form.

Online platforms were very important in 2002 as providers sought to achieve either critical mass of content or take advantage of other organizations sales acumen in the marketplace. Matt Dunie, President of CSA, a leading publisher of bibliographic databases, offered this recommendation to his publishing colleagues at the Washington Association of Publishers, "As an industry, we must organize ourselves so that we can take a random impulse for information and deliver results." Linda Beebe, Senior Director, PsycInfo, at the American Psychological Association put it this way "We want to be everywhere the user expects to find us."

This meant that 2002 saw Wolters Kluwer announcing early on their intent to position Ovid Technologies as their primary platform. Subject specific database producers, such as INSPEC, found partnering with high-profile publisher hosting services, including Engineering Information, ScienceDirect, and Thomson ISI/Web of Knowledge, to be a key strategy for dissemination of content.

Other publishers, in a position to invest in platform development, focused on building or enhancing their own. As an example, electronic reference publisher H.W. Wilson launched a major re-design of WilsonWeb, a platform for more than 50 different databases. Leveraging technology in conjunction with their well-respected content, Wilson added SFX-empowered links that allowed searching of other OpenURL compliant databases available at a subscribing library. Additional customization facilities and administrative tools support needs of both users and librarians.

One of the longest-lived host services, Dialog repositioned itself as a solution provider for the corporate information market, launching Dialog NewsEdge in September, characterized as an industry-specific, personalized current awareness and news alerting service for corporations.

But there were other database providers who chose a different route for disseminating their content. The Getty Conservation Institute, in association with the International Institute for Conservation of Historic and Artistic Works (IIC), moved their Art and Archaeology Technical Abstracts to the World Wide Web as a free service to the international conservation community (<http://aata.getty.edu/>). Launched on June 8,

2002, AATA Online: Abstracts of International Conservation Literature ([aata.getty.edu/conservation](http://aata.getty.edu/conservation)) offered all 36 volumes of Art and Archaeology Technical Abstracts, abstracts from the 20 AATA special supplements and another 2,000 abstracts published between 1932 and 1955 by the Fogg Art Museum and the Freer Gallery of Art. Ultimately, more than 100,000 abstracts related to the preservation and conservation of material cultural heritage are now accessible in AATA Online.

In the United States, Science.gov, built in cooperation by fourteen federal scientific agencies and information organizations including the National Technical Information Service (NTIS), the National Agricultural Library, and the Defense Technical Information Center, entered its testing phase on March with formal launch of the site in December. Content available via the site consists of two distinct segments - 19 government information databases (most, if not all, of which are already available to the public through sponsoring agency Web pages) and a searchable directory of federally sponsored informational Web sites (approximately 1000 sites). The information resources are selected and contributed by the participating agencies, including such diverse services as NASA, the Department of Education, the Environmental Protection Agency, the National Science Foundation and the Food and Drug Administration.

Meanwhile, the library community was working to develop new digitized content themselves, drawing from scholarly collections that might otherwise have been under-utilized. The British Library developed technology to facilitate the viewing of the Sherbourne Missal, which had been previously digitized. Highlights from the Missal were made available to visitors of the Library's public exhibition galleries using Turning the Pages(tm), a touch-screen facility developed by the British Library to show more of its manuscript treasures. From the August 12, 2002 press release announcing the Web-based version of the Missal, "The specially adapted web version allows users to click their mouse to 'turn' selected pages of the Sherborne Missal - a lavishly decorated manuscript detailing the order of service of the Catholic Church... Users can turn the pages forwards or backwards and zoom in on details, such as the colourful illustrations of native birds of the British Isles - a feature of the intricate border design. Audio allows users to listen to the sounds of some of the birds depicted in the Missal."

Other works digitized and made available by the Library in 2002 included the Sultan Baybars Qur'an, funded by the Noon Foundation, and the Silk Road Treasures in conjunction with the National Library of China.

In the United States, the National Science Foundation (NSF) awarded more than \$3 million to the Sheridan Libraries at Johns Hopkins University for two important Digital Imaging projects. According to the press release issued by the University, the first award of \$1.55 million brings together researchers from the Sheridan Libraries with researchers from the university's Computer Science Department, Near Eastern Studies Department and the Applied Physics Laboratory in an effort to create 3-D images of ancient cuneiform tablets. A second grant is for \$1.5 million to fund a project from the Digital Knowledge Center at JHU, focusing on a data capture technique that will allow researchers to digitize a wide range of cultural materials from medieval French manuscripts to music from the 17th Century.

### **Technology's Impact**

Given the central importance of technology to information retrieval, the activities of technology firms in 2002 had to be closely monitored by content providers. Throughout the twelve months, emphasis was on categorization and taxonomy providers.

Vivisimo, a Pittsburgh-based technology firm, was noticed early on when the National Science Foundation awarded them a grant of \$500,000 to commercialize their document clustering technology.

According to the January 29 press release appearing on BusinessWire, Vivisimo has developed software that dynamically groups search results into hierarchical folders in meaningful groupings. The system does not require tagging or the labor and time - intensive creation of taxonomies. Developed by Carnegie-

Mellon researchers, the system has been ranked a top tier search engine tool by Yahoo! Internet Life and also by ZD Net.

The software sits at the output of a search engine and according to Vivisimo, "never needs to access the entire document store." Vivisimo has mounted demos at its Web site that show how document clusters operate in conjunction with such search engines as FirstGov, PubMed, and NASA. The system is compatible with search engines from Verity, Inktomi, Open Text and Fast.

Both Highwire Press and the Institute of Physics announced partnerships with Vivisimo for use of the technology in their electronic journal services.

Early in 2002 came the announcement that Inktomi, a developer of search and infrastructure software, had purchased Quiver. Quiver had specialized in categorization and taxonomy software. Inktomi, which has licensed its software to such large university campus systems as University of Southern California and Indiana University, seemed poised to deliver content to the enterprise application marketplace. But it was only a brief flirtation. Inktomi sold Quiver and the web search engine, Ultraseek, to Verity, a move that impressed industry analysts, as an excellent way for Verity to gain a customer base in the enterprise market.

Emphasis on categorization was found at Applied Semantics who focused on industry standard taxonomies as plug-ins to their Auto-Categorizer product. (One of the plug-ins was the MeSH taxonomy, developed by NFAIS member organization, the National Library of Medicine.)

Technology companies focused as well on enhancing internal processes for publishers. Complex elements of a publisher's infrastructure, as characterized by digital rights management or customer relationship management systems, were highlighted in the May 6 issue of Publishers Weekly. NFAIS member organizations familiarized themselves with companies like Nstein, Recommind, KnowledgeSite, and Data Harmony. Applications from these organizations improve internal efficiencies, easing aggregators and publishers' towards the service/solutions environment sought by their customers and improving profitability.

## **Revenues and Industry Consolidation**

The projected valuations for diverse sectors of the information industry revenues are always interesting to review. Outsell, Inc. this year reported that the STM publishing sector was worth a healthy \$9.3 billion in 2001 and that revenues had increased for the top ten STM publishers by nearly 15%. The report, entitled Industry Trends, Size, And Players In The Scientific, Technical & Medical (STM) Information Market, foresaw an ongoing trend towards consolidation.

On the other hand, the Morgan Stanley report Scientific Publishing: Knowledge is Power (September 2002) set STM revenues at \$7 billion with a projected growth of 6%, but did say that "the niche nature of the market and the rapid growth in budgets of academic libraries...have combined to make scientific publishing the fastest growing sub-sector of the media industry over the past 15 years." The report, which was evaluating Reed-Elsevier in the context of its scientific publishing activities, noted three key drivers for the industry:

- A cyclical slowdown in industry growth due to library budget cuts in coming years
- Benefits of scale that will increasingly accrue to larger players
- Margins will expand for those publishers with successful online platforms

Reporting from the Frankfurt Book Fair in October 2002, the Publisher's Lunch newsletter from Cader Books reported, "...the Financial Times underscores that "the scientific, technical and medical (STM) sector finds itself in an unaccustomed limelight," citing the auction of journals by Wolters Kluwer and the pending sale of Bertelsmann Springer and the possible sale of Blackwell Publishing. "In the current media

downturn, both public and private investors have seized on STM assets as rare haven of growth." Kluwer is said to have received bids from four companies for KAP, including bids from Taylor & Francis and John Wiley & Sons." (See below in Mergers & Acquisitions for the final outcome of that auction.)

One key overview of the STM sector in 2002 was the report from the Office of Fair Trading in the UK. The September 2002 statement by the OFT, entitled The Market for Scientific, Technical and Medical Journals, was relatively brief but significant in its position.

Done in the wake of the Reed-Elsevier/Harcourt merger in 2001, the report acknowledged the vagaries of the market in STM journals in economic terms, calling it "unusual" but not yet in need of government intervention. The report does not find fault with commercial publishers but does make a point of stating that the publishers' pricing rationales were not entirely believable, given the cost differential shown in comparisons of publications from the for-profit vs. the not-for-profit sector. At the same time, the OFT cited a number of market forces in operation (including the SPARC initiative) that seemed to be keeping the situation in balance. Submitting testimony on behalf of the STM publishing community were Reed-Elsevier, plc, and the Association of Learned and Professional Society Publishers (ALPSP).

Lest there be too much triumph in publisher boardrooms, OFT did conclude "...if competition fails to improve, or should additional significant information come to light, we may consider further action." Acknowledging that the UK represented only a portion of the world market for STM materials, a passing reference was made to taking international action to bring the situation in line if market forces were ineffective.

Perhaps what is most interesting (or annoying) about these descriptive analyses of the information industry is that they do tend to be so entirely oriented towards the STM sector. Few studies have ever been done on the revenues associated with the social science or humanities sectors and, most assuredly, none covering those sectors have appeared in the past twelve months.

## **Mergers and Acquisitions**

divine, inc. announced in January that it had acquired certain assets of privately held Northern Light(r) Technology LLC. Terms of the deal were not disclosed. The acquisition of Northern Light's award-winning premium content services, enterprise search technology, and ecommerce transaction engine enhance divine's comprehensive product suite of integrated content and knowledge management solutions for the extended enterprise.

Just prior to the acquisition, Northern Light had announced that they would discontinue support of its free Web search capabilities to the general public. After six years of providing access to both Web content as well as a full-text database of proprietary content, the organization had decided to focus solely on the potentially lucrative enterprise market. Northern Light had been noted for its patented classification technology and proprietary taxonomy, SinglePoint(tm) Custom Content Integration service and the Special Collection business library.

OCLC completed its acquisition of netLibrary in January of 2002. Founded in 1998, netLibrary had been the leading provider of eBooks for the institutional library market, offering hosting, maintenance, and preservation services for eBook collections. They faced bankruptcy in late 2001 following the end of the dot-com investment boom and the events of September 11 but OCLC recognized a strategic fit between netLibrary and their organization. The buy-out restored stability in netLibrary which has thrived since. In fall of 2002, netLibrary announced an agreement that they would be hosting the ebook collection created by Gale, part of the Thomson Corporation. In December, Econtent magazine reported that H.W. Wilson would also be delivering electronic book material via netLibrary.

Midyear came the announcement that Information Today had acquired Online, Inc. Online had sold its flagship Online publication to Information Today in 2001. With the acquisition of Econtent magazine,

aimed at the B2B market, Information Today positions itself as the dominant trade publisher for periodicals specifically aimed at information professional in all sectors.

Elsevier Science acquired Hanley and Belfus, a medical textbook and reference publishing company based in Philadelphia, in August. In conjunction with the Harcourt acquisition in 2001, the move consolidated Elsevier's position as one of the dominant content providers in the health sciences field. The Health Sciences Division of Elsevier Science is headed by Brian Nairn, CEO, and encompasses the journal collections of acquired publishers W.B. Saunders, Mosby, Churchill Livingstone and MD Consult

In November, Wolters Kluwer announced that they had sold Kluwer Academic Publishers to a London-based private equity firm, Candover & Cinven. Plans to divest KAP had been made public during the first quarter of 2002 as Kluwer sought to reposition itself in the marketplace.

## **II. User Demands, Attitudes, Behaviors and Expectations Are Key Driver**

Serving Academic Libraries and the Current User Population: Search and the Average Undergrad

2002 saw the release of numerous studies on the information seeking behaviors of students who are completely at home in the world of online information.

One survey, commissioned by OCLC, reported on student information-seeking behaviors. Just over 1,000 US college students (age 18-24) were surveyed in December 2001 regarding their information seeking practices in terms of information found on the web and in their libraries. The survey found that students are indeed aware that the Web "does not meet all their needs". The problem seems to be that the students really don't know where else to go instead to find what they DO need (whether in terms of getting human assistance or identifying information resources).

Other tidbits from the survey included:

- Only a third of the students expressed a marked preference for electronic copies over printed copies and 89% use campus library print resources, including books, journals and articles.
- Databases and indexes to journal articles were used by only 51% of students surveyed.
- Students specified barriers to access being a major problem for them, perhaps most clearly the inability to access databases remotely due to password requirements and/or license restrictions.

One of the concluding recommendations from the report was the need to pursue relentless promotion, instruction and customer service for patrons of library services and resources. The full report of the OCLC survey is accessible at: <http://www.oclc.org/oclc/pdf/printondemand/informationhabits.pdf>

NFAIS recognized that assisting the library community in the area of promotion and instruction in support of our members' products and services is a key objective. As a result, NFAIS released in 2002 a brochure targeted at the library community and the users they serve. The brochure outlines the values of identifying reliable information via electronic indexes and is currently available in PDF file format at: [http://www.nfaiss.org/attachments/about/nfaiss\\_library1-page.pdf](http://www.nfaiss.org/attachments/about/nfaiss_library1-page.pdf).

Stanford University Libraries and Highwire Press have for some time been following information seeking behaviors of users in electronic journal environments. Not surprisingly, the behaviors have impact on the product development concerns of information providers. For example, this third survey (a follow-up to the original research done in 2001) notes the following:

"Table-of-contents alerts, so far, seem to be the most useful type of alert service. Seventy percent of our sample had used at least one of the three types of alerts we asked about (table of contents, citations of

articles on topics of interest, and articles on keyword(s) of interest). More than three-quarters (80%) of the e-mail alert users in our sample said they had found table of contents (eTOC) alerts to be useful.

- eTOC - email alerts table of contents (2,562 responses - 80% of all alert users)
- article citation alerts - citations of articles on topics of interest (907 responses - 28% of all alert users)
- article keyword alerts - articles on keyword(s) of interest (877 responses - 28% of all alert users)"

The full report is available at: [http://ejust.stanford.edu/findings3/report\\_survey3.html](http://ejust.stanford.edu/findings3/report_survey3.html)

The Digital Library Federation in conjunction with the Council of Library and Information Resources commissioned Outsell to conduct their own survey earlier this year involving more than 3200 students and faculty at 400 institutions.

The full text of **Dimensions and Use of the Scholarly Information Environment** can be found at:

<http://www.clir.org/pubs/reports/pub110/contents.html>

From the conclusion is the following key summation: "Preliminary observations have brought to light several examples in which respondents in the liberal arts colleges and in the biological sciences and arts and humanities seem to rely on the library and its functions and services more than their peers in the other disciplines do...Library directors and college and university administrators face an increasingly complex institutional and informational environment. The population they serve is far from homogeneous in its level of sophistication, information needs and infrastructure requirements."

The validity of this was further supported by a report done at the Dewey Library at the University of Notre Dame. A series of focus groups held at the University early in 2002 reveals the difficulty currently experienced by users (both faculty and undergraduate) in their use of the library and Web-based information resources. Bewilderment is not too strong a word. Said one user, "You've got to know how to do it in this library and you get the help page and you go through it and I'm not stupid, you know...but, I just can't figure it out" (see the full report on these focus groups and subsequent recommendations for action at <http://dewey.library.nd.edu/focusgroup/plan.shtml>).

These concerns are clearly not isolated. The issue of providing a readily understood, easily navigable information environment for users is a significant one for libraries throughout the world. Not only is the current digital library different from the library of a decade ago - so is the current individual user different.

Other recent studies document this difference:

- The Internet Goes to College: How Students are Living in the Future with Today's Technology, The Pew Internet and American Life Project, accessible at: <http://www.pewinternet.org/reports/toc.asp?Report=71>
- The Digital Disconnect: The Widening Gap Between Internet-savvy Students and Their Schools, The Pew Internet and American Life Project, accessible at: <http://www.pewinternet.org/reports/toc.asp?Report=67>

Faced with this user population, systems librarians focused largely on enhancing access for users through linking of all types of information resources and the creation of portals. The September 15 (online) issue of Library Journal featured an article on library portals by Mary E. Jackson, Senior Program Officer for Access Services, Association of Research Libraries, explaining the fascination:

"Users frequently cite ease and convenience as the main reasons they prefer commercial search engines over gaining access to electronic resources through a library's web site...Libraries must gear up to provide a competing level of convenience while retaining the authority and quality of information delivery for which they've have been traditionally known."

ARL specifically looked at the portal concept in a survey of their members early in 2002. Specifically characterizing as portals those services "that include (1) search engine tools that offered the user the capability to search across multiple sources and integrate the results of those searches; and (2) at least one kind of supporting service for the user (such as requesting retrieval or delivery of non-digital material, online reference help, etc.)", the reality profiled in the results of this survey was smaller than one might suspect. Out of 77 respondents to the ARL survey, only 16 met the above criteria.

Among the desired features and enhancements of portals sought by the respondents to the survey for their portal services were (a) the creation of vertical portal(s) by a community of interest; (b) navigation by subject through all resources; (c) more pervasive personalization and integration into campus portal services; and (d) ability to customize links to individual journal titles. (For more, see:<http://www.arl.org/newsltr/222/portalsurvey.html>.)

### **III. Ongoing Debate as to the Role, Protection and Use of Content In Networked Society**

#### **Industry-Wide Issues Include Open Access**

Events in late 2001 created a period of hesitation in the first weeks of 2002 until mid-February when it was announced that the Budapest Open Access Initiative (BOAI) had received \$3 million dollars in support from the George Soros Open Society Institute with the intent of "accelerating progress" in making research articles and associated materials freely accessible via the Web.

The BOAI relies on the individual researcher to bear the burden for much of the work currently performed by publishers and information services. The Budapest Open Access Initiative is one that emphasizes self-publishing (or self-archiving) by individual scholars in open electronic archives, as well as the creation of open-access alternative journals.

BOAI specifically defines open access as "free availability on the public internet, permitting any users to read, download, copy, distribute, print, search or link to the full texts of these articles, crawl them for indexing, pass them as data to software or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself."

The UK based organization, ALPSP (Association for Learned and Professional Society Publishers), subsequently issued the Budapest Manifesto in response to the BOAI announcement. ALPSP represents 200 organizations, many of which are scholarly society publishers with "a commitment to the widest possible dissemination of information for the good of scholarship". The Manifesto points out that many publishers already make archival content freely available and rightly points out that publishers are shifting their activities to accommodate the needs of the research community, "developing and testing alternative funding models which might be more sustainable than the present library subscription/license model." (see <http://www.alpsp.org/budapest0202.pdf>).

Also from ALPSP was the report, Electronic Publishing and Learned Societies, that discussed the issues facing non-profit scholarly and professional societies in trying to move towards the level of electronic access being demanded by researchers. Focusing on such key aspects as cost, licensing agreements, and acceptance of the form, ALPSP's statement suggested that publishers were doing as much as possible to meet expectations of the market while still remaining financially stable themselves. That report can be viewed at: [http://www.alpsp.org/epub\\_learnsoc.pdf](http://www.alpsp.org/epub_learnsoc.pdf).

At the Online Information 2002 meeting in London, the French organization INIST announced that they had reached an agreement with BioMed Central to host the BioMed Central archive on INIST servers. The most important statement in the press release, dated December 3, was the following: "Furthermore, this agreement, concluded in a somewhat disturbed economic climate, evidences INIST's adherence to the "Open Access" scientific communication models, in the image of the now emblematic Budapest Open Access Initiative (BOAI)."

There were similar "open access" initiatives elsewhere. In a September announcement, FIGARO was announced as "an academic publishing project that will create a European network of institutions providing e-publishing support to the European academic community." The aim was to be investigation of new business models for scholarly publishing with primary participants including Delft University, University of Hamburg, Carl von Ossietzky University Oldenburg, Daidolos bv IT in Publishing, and Università degli Studi di Firenze. SPARC (an arm of the U.S. based Association of Research Libraries) was listed as an associate contract partner, even as they announced the appointment of David Prosser as the director of the SPARC Europe office in the U.K.

Not surprisingly, SPARC and SPARC Europe actively discussed the feasibility of "open access" publishing for individual institutions. The organization held workshops in Washington DC and in Geneva with the SPARC position paper entitled "The Case for Institutional Repositories" forming the basis for discussion. (The full text is freely accessible at the SPARC organizational Web site.)

The emergence of new institutional and national repositories in the interests of "open access" poses a variety of questions for all publishers and will bear watching over the course of the coming years. Like grey literature, will the documents held in these "open access" repositories occupy a murky place in research literature? Questions of quality, reliability, and integrity may cause indexing services to hesitate before including the materials in their subscription-supported product databases. But the exclusion of the material may result in rejection of the high-quality products by user communities who may prefer to rely on their own judgment in selecting the literature to be cited.

In the U.S., information professionals, commercial providers and government agencies continued to struggle with each other over the appropriate boundaries of information activities by the government. One example was the friction that surrounded the U.S. Department of Energy's information resource, PubScience. In August of 2002, the Department of Energy's Office of Scientific and Technical information (DOE/OSTI) announced that it was seeking comments regarding the closure of PubScience. PubScience had been a source of contentious debate for content providers since 2000, unable to reach consensus on whether the service represented an appropriate level of service by a government agency operating under OMB Circular A-130 or represented instead undue competition for private sector providers. On November 4, the site was shut down and users were referred to two other services, Scirus (a search site that incorporated both publicly available and proprietary STM content) and Infotrieve, a document delivery service.

But other concerns were raised in 2002 as various U.S. government agencies removed seemingly sensitive documentation from their Web sites in order to comply with directives from an Republican administration focused on homeland security. Whether concern over anthrax, exposed water resources, or air safety data, agencies were removing any materials that might be deemed potentially useful to terrorist groups. Librarians were and continue to be deeply alarmed by the trend but officials have tried to offer clarification of the scope of items removed. On the ICSTI listserv, Kurt Molholm of the Defense Technical Information Center (DTIC) offered this clarification of the scope and rationale for removal of materials from their site:

"What was decided and applied to the Federal Government organizations ... was to search our bibliographic files for documents that may now have again become sensitive, immediately remove the citations and any online full-text documents and make a more in-depth analysis...The Department of Defense (namely DTIC) pulled in some technical area specialists in nuclear, chemical, biological, etc. and refined our search strategy. The result was we pulled 6600 citations from our public online bibliography

file so that DoD specialists could review the full document in depth. Some of the citations also included full-text documents. These were also removed. The plan was, and still is, to return most of the documents to the public files. DTIC still has over a million citations to publicly available reports in our on line facility. As you can see the 6600 documents temporarily removed (except for a small number) is a very small percentage of our collection."

### **Intellectual Property, Access and Rights Management on a Global Scale**

Another ongoing industry concern was the treatment of intellectual property in the global community. Whether challenging copyright term extension in the United States (*Eldred v. Ashcroft*) or commenting on the UK Patent Office's "Consultation Paper on UK Implementation of the EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society", the appropriate handling of intellectual property rights created strong feeling in 2002. As always, users, librarians, technologists, and content providers view the need for copyright protections differently, since their sense of appropriate online behavior and usage are directly related to their sphere of activity. Librarians and users seek formal protection of traditional "fair use" guidelines while aggregators and publishers seek to protect their investment in profitable products and services.

Discussions continue but with hints that a showdown may be in the offing. Duke University Law School announced that it had received an anonymous \$1 million gift to fund advocacy and research aimed at "balancing" the needs of the public domain with the needs of intellectual property owners. This, of course, was due in part to the concerns raised in the *Eldred v. Ashcroft* suit heard before the Supreme Court in early October.

Access and authentication concerns are an integral aspect of intellectual property in a networked environment. As an example, as this article was being prepared, a lengthy letter was posted to the Liblicense listserv from JSTOR President Kevin Guthrie, regarding his organization's experience with illegal downloads of more than 50,000 articles housed on the JSTOR archive. Focusing on concerns with poorly configured proxy servers which enabled remote access via a institutional subscriber, Guthrie was concerned that the information community needed to become more aware and more proactive regarding the various issues surrounding authentication of users who access proprietary content.

The subsequent discussion brought forward a laundry list of concerns and "work-around" solutions from the librarians on the list including allowing access of walk-in users to material licensed by a state-funded institution, protection of privacy on campus, and piracy "a la Napster". Legitimate and necessary uses of information needed to be protected as much as did JSTOR's assets.

Handling of proprietary electronic materials had been expected to be resolved by means of digital rights management (DRM), another topic in 2002. The UK Publishers Association offered their stance on digital rights management in a September statement, which is essentially contained in the following three points.

1. The publishing sector should be involved in any standards setting process for DRM.
2. A two-tiered approach would be ideal. International and interoperable standards would be required for appropriate management of digital rights but choice as to appropriate encryption or access control systems was essential in allowing publishers to properly protect their rights.
3. DRM should be positively positioned as a business to customer facilitating medium and not as a means of blocking access.

Essentially, publishers want to work with other industries as well as with users to establish protections (whether legislative or technological) that will allow intellectual property to be used and transferred without harm to creator or user. Publishers hope to avoid the bad press garnered by the global music industry after commercial interests threatened to use heavy-handed means to combat piracy of music files over

such networks as Morpheus and Kazaa. College campuses with the opening of the fall semester tried to firmly establish appropriate parameters of behavior for students in terms of downloading music and video materials onto campus networks. The difficulty lies in establishing social norms for a population coping with rapid expansion of technology.

## **Conclusion**

Integrating content and technology in 2002 truly was both exhausting and exhilarating. While professionals may weary of the words "transition" and "change", 2003 will offer interesting opportunities for all members of the information community. Look forward, then, to new strategies for success in the coming new year!