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FullText Journal Subscriptions: An Evolutionary Process

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1997 is the year when there is suddenly a multitude of options for electronic journal literature from primary and secondary publishers, subscription agents, and aggregators. Given the many companies which announced new products at ALA Midwinter, this article attempts to provide an overview of the offerings prior to the summer conference in San Francisco, and some ideas to consider as libraries examine their options.

Over the last decade many libraries have chosen to subscribe to a business or general A&I service, which includes the fulltext of articles (from **UMI, IAC, EBSCO**) in the database (either on CD-ROM or via the Web), thereby simplifying the process of providing their patrons with journal literature in this area. Progress in providing access to the fulltext of electronic journals has been slower in the STM market, marked by several developmental projects, such as the **Red Sage** project in California and **TULIP** from **Elsevier**. **Adonis** was popular in the corporate market as a source of local document delivery for more than 800 biomedical titles on CD-ROM, and has introduced their **Electronic Journal Subscriptions** service, offering libraries PDF formats of journals delivered on CD-ROM. (See article this issue, p. 26)

In the December 1996/January 1997 issue of *Against the Grain* (v.8#6, p.70), **Joyce Ogburn** pointed out that electronic versions of journals may be less than complete in terms of articles, images, graphics or citations. Although electronic products may offer more information and articles than a library can acquire through print subscriptions, libraries seeking to replace their print subscriptions with electronic

alternatives need to consider that the options are not necessarily equivalent.

Materials below the article level, such as letters to the editor, errata, meeting calendars, book reviews, are less likely to be reproduced online, unless the original publisher can determine that it is cost effective to do so. Collection oriented academic research librarians, who want to provide electronic access to scholarly journals over the Web, are faced with offering the convenience of access to the content, potentially increasing use, at the possible expense of an archival copy for future reference.
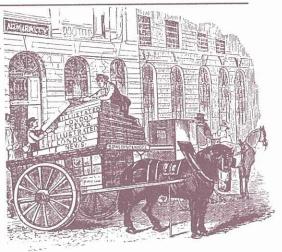
MARKET TRENDS

All of the companies selected offer Web accessible subscriptions to electronic versions of STM (scientific, technical medical) journals. Every company was asked to discuss the same topics for consistency and, where the answers are predominantly the same, the trend is summarized. Several companies, such as **Kluwer**, mentioned that they had programs in development, so look for announcements from them within the year. Company specific information is detailed below.

Although I intended to distinguish the companies by whether they offered cover-to-cover reproduction of the print, I found that even the primary publishers may not replicate the complete print version in electronic form, due to the nature of the material. Whether companies are linking to publisher Web sites to access the fulltext or are loading the data on their host systems, most stated that the content was comprehensive but often qualified it by saying that it varies with the publisher.

The very nature of electronic information raises the question about what is an archival copy and this is a topic of discussion at many conferences. Several companies indicated they were working on developing a solution that would address the libraries' concerns while others stated this was not easily done given their approach of linking to source material on another Website.

The Web environment is a giant network and lends itself to linking people, documents and data, individually and in groups. Most companies offer connections to other Web sites as a way of providing additional information and source material to their users.

The most widely used format is the

Portable Document Format (.pdf) which presents a page image on your monitor for viewing and printing. PDF is basically a document standard which can be enhanced as searchable but does not lend itself to tagging fields for searching or linking to other sources. **SGML (Standard Generalized Markup Language)** is a publishing standard that provides greater flexibility in accessing data and repackaging it for multiple uses. Many consider PDF to be a transition stage until more publishers embrace a searchable format.

Just as this is the era of interconnectivity, companies are increasingly involved in partnerships, which enable them to broaden the scope or depth of their service, without bridging into new arenas where there are established players. Every company I spoke with referenced discussions with other companies which would result in announcements of additional services.

Usage reports are or will be available with every service. This area is sufficiently new that most providers are still in the process of defining what these measures are and how they will look. Reports on usage by journal title, articles and groups of users were mentioned most frequently.

Grouping companies by their historical function does not reflect the functional changes occurring in the market, so they appear in alphabetical order. Key features about the availability of the service, the number of titles, how they can be accessed and distinguishing features of their system are presented.

ACADEMIC PRESS
<http://www.apnet.com>

IDEAL (International Digital Electronic Access Library) offers a package of 175 journals in electronic form licensed to consortia. These titles include all con-

> *If the number of new ISBN prefixes is any indicator, independent publishing is flourishing as never before. In one recent year, 1994, 7,305 ISBN prefixes were issued to new publishers, an increase of 13% over the previous year.*

tent, except ads or calendars, and are offered as a complete package rather than individual subscriptions. Anyone with Web access can search the table-of-contents (TOC) and abstracts at no charge.

The bibliographic data, including abstracts, are presented in HTML with PDF images and the fulltext is searchable within articles. Each journal is linked to the homepage for that journal. A TOC alerting service delivered via email is available on some titles. Coverage is complete from 1996 for all titles and some go back to 1995.

Developments are planned to take advantage of the Web environment, such as links to color illustrations which are too expensive to print. Some journals are being released article by article as they become available rather than issue by issue, which will shorten the publication cycle. Links from citations to A&I services and other publishers are being created as are specifications for subscription agents and A&I services to link directly to the fulltext/image article available online.

The total number of registered users for IDEAL with consortia such as **Ohiolink, Peachnet** (GA), **VIVA** (VA) and **NERL** (New England Research Libraries) exceeds 4 million. The price of the electronic collection is comparable to the collective print subscriptions which can be retained at a greatly reduced rate.

BLACKWELL
<http://navigator.blackwell.co.uk>

Electronic Journal Navigator (EJN) is Blackwell's name for their service which provides an index of 360 journals (and growing) and supports delivery of journals over the Web. EJN offers a single point of access, reference, control and financial management for all electronic subscriptions.

EJN is available on a subscription basis, which includes full access to searching the tables-of-contents and displaying citation and abstracts of the journals covered. Separate subscriptions to selected journals offered on the service are necessary to gain access to the full electronic articles. Searches can be limited to a subject discipline and to the journals for which the library has an electronic subscription. Various standard usage reports can be automatically produced, and customized reports can be created with the built-in report writer.

A standard Web browser provides access to the service and automatic links are built to the journals. Blackwell's will accommodate any format from the publisher, and currently the service contains articles in **PDF** or **RealPage**. Committed to addressing the archive question, Blackwell's is exploring options to support access for libraries with paid subscriptions.

Blackwell's has partnered with **SilverPlatter** to link to secondary databases from EJN and with **UnCover** to deliver fax-based document delivery of print journals.

EBSCO
<http://www.epnet.com>

EBSCO Information Services is comprised of three divisions all involved in delivering fulltext/images. Individual electronic journals are offered as subscriptions through **EBSCO Subscription Services' (ESS)** online journals initiative, which will provide gateway access to publishers' content via the Web. **EBSCO Publishing (EP)** offers over 35 different databases of fulltext files focused on different subject areas and different markets. **EBSCO***doc* completes the group by delivering articles indexed in EP databases which are not yet available in fulltext.

Of the 4500 titles which EBSCO Publishing abstracts, they have fulltext licenses for over half of the titles which are predominantly available cover-to-cover with a handful of publisher exceptions. EP scans the print version of the journal or loads and reformats electronic text from the publisher, which is retained with copies of the images. The databases are searchable via natural language, Boolean or the subject authority file created by EP indexers. Links to the publishers' Websites are available with some product lines as are links to a library's holdings.

EBSCO Alert is the email based current awareness service. **EBSCO***host* databases are accessible with a Web browser, windows software, MAC or dumb terminal. Some **EBSCO***host* databases are available through **OCLC, III, Dynix, CARL, Vista.**

ELSEVIER
<http://scienceserver.orionsci.com>; <http://mcdougal.elsevier.com>

Since 1995, **Elsevier Electronic Subscriptions (EES)** has enabled libraries to locally load all 1100 journals (or subsets with a minimum of 50). EES was sold mostly to consortia who use **OCLC Site Search** software or develop their own. Now EES is introducing **Science Server**, a document management system which works with a Web interface and protocols (TIFF, & ASCII, PDF & HTML) and provides for fulltext searching. Users can navigate from citations to articles and have access to an alerting service.

As an alternative, Elsevier is introducing **Science Direct**, which will go into an early release this year, growing to 1000 journals which will be available by individual title or in subject-oriented packages. Basic and advanced search strategies will enable users to perform fielded and fulltext searches and offer the option of limiting the search results to paid electronic subscriptions. An alerting service is in development which will deliver via

email the results of a profiled search. A life sciences index of 1700 titles going back five years is included with Science Direct. This expanded index enables subscribers to access articles from a larger file on a pay per use basis or request traditional document delivery. Subject specialty subsets are being developed on Web sites that offer a host of additional community-oriented features.

Data will be presented in HTML and PDF formats from SGML and all captions are fully searchable. Users can navigate from the bibliographic references to the fulltext of the cited material and to other Web sites.

HIGHWIRE PRESS
<http://highwire.stanford.edu>

HighWire Press, a unit of the **Stanford University Libraries,** is two years old and offers 12 fulltext journals, with 13 more titles under development. The goal of the Press is to partner with university presses and scholarly societies to offer high quality scholarly literature, leveraging new technologies in a non-profit environment.

The richly linked HTML text is completely searchable on the Web. Sophisticated links enable the searcher to move to other Web sites, from bibliographic citations to A&I services and email authors directly from their article. A TOC alerting service is available which will be extended to include customized search results in the future.

Nine of the current 12 journals are free of charge and represent leading titles in their respective disciplines, for example *Science Magazine* and the *Proceedings of the National Academy of Science*. Archiving will be maintained by Stanford University for the publishers who own the content of the journal mounted online.

INFORMATION QUEST, INC.
<http://www.informationquest.com>

Information Quest (IQ) is owned by **Dawson** which also owns **Faxon**. IQ offers an indexing layer that provides a single-user interface and search engine, so that users can easily access a large number of publishers' fulltext electronic journals. Rather than house data locally, IQ is using a sophisticated search engine to automatically index the fulltext of STM journals and link its citations to publishers' data warehouses for downloading fulltext in PDF.

To be released in Spring '97, IQ charges a fee for their service. Institutions order their journal subscriptions directly through the publishers or via a subscription agent. Individual subscriptions are the norm unless the publisher dictates that their titles are only available in packages.

IQ's distinguishing feature is its natural language search engine which offers a semantic network allowing users to specify

the meaning of their search terms. IQ also features indexing at the binary level which enables "fuzzy searching". Both of these increase the hit rate, without the time-consuming process of human generated indexes.

Netscape 3.0 is required to use IQ because of the need to support Java, frames and certificates, which are necessary in viewing the images on screen and verifying the identity of the user. There are links directly to the library's collections so the user can ascertain whether titles are locally held.

INSTITUTE OF PHYSICS
<http://www.iop.org>

Introduced in January 1996, **IOP's Electronic Journals** service provides institutional subscribers with fulltext access to all 33 titles weeks or months before the print publication at no additional charge. Individual print subscribers will be able to access the electronic journals.

The latest version of the service will include **HyperCite** technology providing links from IOP's article references to ab-

Anyone with Web access can search the TOC without charge and one fulltext issue of each journal is available online In addition to searching the fulltext by any word or Boolean modifiers, subscribers can use hypertext links in tables of contents, articles, citations, endnotes, author bibliographies and illustrations to navigate the database. Users also have the option of keyword searching using LC classifications.

Subscribers are allowed unrestricted access for articles on demand and for class reserves, but use is limited to the university community. Libraries may store archival copies in a variety of mediums including paper, CD-ROM and microfilm.

OCLC
<http://www.oclc.org/oclc/menu/eco.htm>

As a library membership organization, **OCLC** seems uniquely positioned to address the question of archiving for the fulltext/image of scholarly journals. To accomplish this task, OCLC's licenses with publishers require that the data is mounted at OCLC or that provision be made to do so in the future. The objective of **Electronic Collections Online (ECO)**

OVID
<http://www.ovid.com>

Ovid's goal is to provide the user with a one-stop shop for STM information. By the fall of this year, Ovid will offer libraries the option of subscribing via the Web to their choice of 320 titles in fulltext. Eighty-six of these have been available this last year in six different subject packages: **Core Biomedical I, II, III, IV, Nursing**, and **Mental Health**.

Comprehensive in terms of articles, the journals do not include ads, announcements, or instructions to the author. Ovid handles the subscription so there is no need to go through an agent or the publisher.

Natural language mapping is in development and the tables-of-contents, author abstracts and fulltext are searchable with a controlled vocabulary and graphical thesauri. Ovid will link the most used of their 80 bibliographic databases directly to the fulltext and users can navigate from citations, to indexes, to fulltext.

Ovid has a working arrangement with six publishers (**Blackwell Science, Lippincott-Raven, Munksgaard, Plenum**, and **Williams & Wilkins**) to convert their primary journal literature into SGML format, a task which the publishers will assume in 1998. Pages are displayed and printed in HTML.

An alerting service offers custom searches with results emailed to users. Ovid is developing a strategy to address questions on archiving by negotiating with the publisher to provide the library with archival data. **ISI** has partnered with Ovid to provide document delivery of articles not yet available electronically in fulltext.

Librarians are faced with providing convenience of electronic access to the content of scholarly journals over the Web at the possible expense of maintaining an archival copy for future reference.

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stracts from **INSPEC**'s database of scientific and technical journals dating back to 1969. It also will link from an article to the abstracts of articles that cite it, providing both forward and backward citation links.

Anyone with Web access may browse the tables-of-contents (TOC) free of charge and link to journal homepages where they can view selected fulltext articles from recent issues, along with additional information on each title.

Journals are displayed in PDF or Postscript format, including all mathematics and figures. An email TOC alerting service is available now and a profile-based service is planned. Future developments include a five-year archive online and the fulltext available in HTML.

JOHNS HOPKINS UNIVERSITY PRESS
<http://muse.jhu.edu>

Launched in 1996 by the **Hopkins Press**, the **University's Eisenhower Library** and its academic computing center, this project was originally funded by the **Mellon Foundation** and more recently the **National Endowment for the Humanities**. **PROJECT MUSE** offers more than 40 journals in the social sciences and humanities.

is to provide the online equivalent of print journals.

To be released mid 1997 with 100 journals initially, ECO already has 500 titles under contract and is growing rapidly. Libraries subscribe to the ECO service with OCLC to access journals electronically and then subscribe to specific titles through their subscription agent or the publisher. OCLC is using the Newton search engine.

Users can search across all journals in ECO, browse by title or limit searches to their electronic collection. The Newton search engine accommodates both a basic and expert level and users can search journals classified within subject areas. Users can link directly to the publisher's Website and to bibliographic databases such as **Medline**. An electronic document delivery service is in development as are links to the bibliographic files in **First Search**, to be delivered next year.

Pricing is based on the number of subscriptions and the number of simultaneous users. Fees cover the cost of storing the collection, providing access to it, migrating to new technologies and providing technical support. OCLC is partnering with the subscription agents who will handle payments to the publishers for the licensing of the content.

SPRINGER
<http://link.springer-ny.com>

Of the 400 journals **Springer** publishes, the **LINK** service currently offers close to 180 of them in electronic form via the Web. Ten **Online Libraries** comprise the core of LINK, covering: chemistry, economics, environment, life sciences, medicine, computers, engineering, geosciences, math, physics. Collectively the Online Libraries are called the **"Forum for Science"** and, as the service matures, users will find tables-of-contents (TOCs) of books, software demos, meeting calendars, association news and moderated discussion forums.

The journal TOC and author abstracts can be searched and browsed free of charge by anyone with Web access. Current individual and institutional print subscribers can access the entire content during 1997 at no additional charge.

The search facility, based on the **Livelink** Search engine from **OpenText**, is being implemented. Both simple and power search modes are planned for the novice and experienced searcher. Articles

Profiles Encouraged:

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Geography: Born in the Naval Hospital in Bethesda MD, then moved to Newport RI, before settling in St. Petersburg FL at the age of five. Discovered air conditioning in 1960 and grew up with daily doses of sunshine and fresh grapefruit. After two library degrees from FSU and 13 years in the academic world, moved to Atlanta as a convenient location for the SE. Completed an executive MBA at Emory University before relocating to Philadelphia. Now I have a closet full of coats and my very own snow shovel.

First library job: While in high school, I spent summers working at the Science Center in St. Pete where kids worked on projects. The first summer I was a volunteer, and then was paid the next two summers. I regularly ask what draws people to library work and believe that more than half of us decided on a career in libraries after working in them or spending time in them while working on graduate degrees.

Current position: Market and Business Development Consultant. After 25 years in the industry, half on the library side and half on the publisher/vendor side, I'm enjoying a bird's eye view of the industry.

Building blocks: While at Florida State, I worked in their film library booking educational films to be shipped all over the US. On leaving Tallahassee, I became Documents Librarian at Stetson University in Deland and then Library Director at Embry-Riddle Aeronautical University in Daytona Beach, FL. I was always presenting ideas and services for approval at Embry-Riddle as the school grew, so I went into sales with Faxon feeling that the skills would serve me well in management The business path led me to Philadelphia and the Institute for Scientific Information until I left in the fall of 1996 to work as a consultant.

Adventures: Whitewater rafting in GA and the Gauley in West VA. Most memorable trip was a week down the Colorado River through the Grand Canyon. An Earthwatch trip in Idaho working with a research team led by a faculty member tracking mountain lions to document their habitat, was a lot of fun. The four corners area of UT calls me back to canyon country every year.

Hobbies: Photography, hiking, gourmet vegetarian cooking, running, exploring the metaphysical realm including meditation and workshops on world religions.

Philosophy: We create our own reality.

Favorite quote: "Frontiers of any type, physical or mental, are but a challenge to our breed. Nothing can stop the questing of men, not even man. If we will it, not only the wonders of space, but the very stars are ours." Quote from science fiction work I read in high school.

are presented in a variety of formats including HTML, PDF and Tex. Links to helper applications are available from the Link helper site with customer support provided by Springer.

The electronic editions will offer access to supplementary material such as color images, sound, video, datasets and software. An alerting service is planned for later this year. New issues will be matched against user interest profiles and users will be alerted via email when articles of potential interest have been added to the LINK server.

For a subset of Springer's life sciences and medical journals, hyperlinks from reference citations to **Medline** records in the **NCBI PubMed** database, have been added. Links from *Chemical Abstracts* are being developed to supply fulltext for their index.

SWETS
<http://www.swetsnet.com>

Launched in spring of 1997 with 600 journals, **Swetsnet**, has a goal of growing to 3500 journals by year end. Swets is hosting some publishers' titles and providing gateway access to other publisher sites for electronic fulltext access.

Tables-of-contents (TOCs) for all fulltext titles in Swetsnet are browseable free of charge to anyone with Web access. Subscribers to the service can access both TOCs and authors which are searchable in HTML with fulltext displayed primarily in PDF. Links to publishers' homepages are available and links to journal holdings is a future development, using Z39.50 protocol by the end of 1997.

Every user on the system can establish a profile of subscribed journal titles and have the TOC of the most recent issue sent via email. Keyword searchable profiles will appear in a future release.

Swetscan, their TOC service of 13,000 journals, has been integrated into **Swetsnet** providing users broader search capabilities. Electronic document delivery may be available for users who need articles that appear in the index, for journals for which they don't have a subscription.

CONCLUSIONS

All providers are looking at ways to add value to their products, whether they are the publisher of the content or the aggregator offering enhanced access. Publishers are speaking about adding links for color images (not practical in print journals), multimedia and expanded Web sites with a community focus. Three of the four subscription agents offer an index to a broad number of journals, with document delivery complementing fulltext online.

Libraries will need to determine which approach will best suit their needs. In reviewing the possibilities, libraries may wish to consider the following questions, as they examine their options.

1) How easy to use is the search engine? Does it provide for a basic and advanced level of searching? Does it index at the fulltext level or the header data (bibliographic and abstracts)?

2) Is there a way to narrow the search to those titles which are held by the library and does it indicate if the title is held in a print and/or electronic format? Is a link to library holdings important and how will that work for your institution?

3) Are you intending to replace your print with the electronic version and is archiving a consideration?

4) What is the match between the titles which are offered and those that would best fit the needs of your users?

5) Are you looking for a large index to many titles, with accompanying document delivery (horizontal solution) or increased access to selected fields with additional source material included (vertical solution)?

6) What provision has been made for security (IP addresses or passwords) and how does that fit your environment?

As with any rapidly developing field, the questions come faster than the answers and each library will want to evaluate their needs in terms of the ever-increasing options available to them. With the market evolving quickly, product life cycles are shrinking, as providers attempt to introduce new products for their users before the technology shifts. Libraries are challenged to select the option which will provide the greatest access for their users given the budget pressures they experience.

ADDITIONAL REFERENCES

George Machovec, Technical Coordinator at CARL, provides an excellent overview of the issues in the **Electronic Journal Market** <http://www.coalliance.org> including: pricing, security, page layout, copyright, backfile availability, and reliability of access to the data.

Charles W. Bailey Jr., the Assistant Dean for Systems at the University of Houston Libraries, maintains the **Scholarly Electronic Publishing Bibliography** on the Web which is updated frequently <http://info.lib.uh.edu/sepb/sepb.html>.

Ann Okerson, Associate University Librarian at Yale, is the Project Coordinator for **Liblicense**, a Website and online discussion group.

RECOGNITION

My thanks to the many people (you know who you are) who contributed to this article in such a timely fashion. Your help, in both asking and answering questions, is greatly appreciated. 🐸