

SOURCES FOR E-JOURNALS

An estimated 15,000 electronic journals exist, and this number continues to grow as publishers recognize that print-only journals could disappear from view in the tide of electronic information.

Electronic serials can be bought singly or in units of a few thousand. Librarians can acquire e-journals one-by-one from individual publishers, in bulk from aggregated database producers, or in packages of various shapes and sizes, either from those who publish them or from others whose business it is to gather them into saleable bundles.

Librarians first need to decide which online journals they want. Then they must determine how and where to acquire them.

This chapter focuses on the various sources for e-journals, with a section on each of the following:

- Traditional aggregated full-text databases
- Journal gateways and journal aggregators
- Publisher packages
- Free-with-print combinations
- Free journals
- Low-cost alternatives to commercial journals

Traditional aggregated full-text databases

Most libraries of any size will want to make available a broadly interdisciplinary full-text aggregated database. Producers want this database to be an indispensable, high-use source of basic information for library users whether they are undergraduates at a university or the patrons of a public library.

Each vendor has a product line, with offerings aimed at different types of library consumers, from large research institutions to school libraries. The aggregator normally has a "one big file" option that is the top-of-the-line subscription. These megafiles are presented as good choices for consortia with members of varying size and type.

Subsets of the big file, often with added content from other sources, are targeted at specific types of customers. For example, reference tools, biographies, and primary source documents are frequently included in offerings to public libraries.

Newspapers, consumer health, and business sources also may be included as part of the basic offering or contained in a separate product or products marketed together with the general subject database. General-purpose databases typically cover a set of 700 to 900 of the most commonly read magazines and periodicals.

The intended audience determines the number, degree of specialization, and intellectual sophistication of the titles added to this core group in the different products. These factors also have a direct impact on the cost, as does the extent of the backfile offered.

Databases also may include added value features (such as Web page builders) that do not increase the price but are offered as inducements to purchase and in response to needs expressed by librarians. The key factor in determining cost usually is size of the user community.

The next section describes databases offered by H. W. Wilson followed by a longer review of products from Gale/InfoTrac, ProQuest, and Ebsco, the three major producers of aggregated full-text periodical databases. The discussion of the big three covers:

- How the perspectives and values developed over the history of the company shape current product development
- How these perspectives and values influence marketing strategies and plans for future development
- What goals providers have for improving the content within their products
- What major added-value features are available, including, for example, provision of OPAC records for e-journals indexed
- How much has been done to enrich the content of the database via links to external sources of full text or other services

Offerings of each of the major providers are first discussed separately. These aggregator-specific summaries are followed by comments on some of the major issues related to content in aggregated databases (for example, titles with embargoes on current issues). The section on full-text aggregated databases ends with practical suggestions for comparison and evaluation.

H. W. Wilson: How much full text is enough?

H. W. Wilson is a good starting point for a discussion of general periodical database producers, although it is not in the same league with the heavy-hitters Ebsco, Gale, and ProQuest. Despite (or perhaps because of) its status as the oldest maker of abstracting and indexing (A&I) services, Wilson has moved at a decorous pace into the e-publishing and e-journal aggregation arena.

On the other hand, Wilson's model of close cooperation with libraries in selecting the most authoritative journals for inclusion in its products and its subject indexing practices have had an impact on how vendors with more ambitious journal aggregation programs do business and are judged.

To satisfy customers who have depended on Wilson indexes over the years, the major general database producers have tried to include as many as possible of the titles indexed in core Wilson products (for example, *Reader's Guide*, *Humanities Abstracts*, and *Social Science Abstracts*). A cadre of loyal customers are reluctant to give up tools regarded as old, reliable friends.

Since it cannot really compete on the level of the big database producers, Wilson employs a "small is beautiful" marketing strategy based on quality versus quantity. Its 2001 slogan, "Not everything...simply everything you need," has an environmentalist spin that libraries considering more coverage than Wilson offers might take seriously as they evaluate larger, more expensive products.

Because Wilson is selling known quantities respected for high quality, it calls its core products what it has always called them. Thus Humanities Abstracts also is available as Humanities Full Text. The database, however, contains full text for only a limited selection of the 460 titles indexed, as do the other contemporary research databases. Wilson's full-text databases have no more

OPAC: Online public access catalog

than 30% to 50% of indexed titles available in full text, with files extending back only to 1994.

Like the major aggregators, Wilson has a one-big-file option, OmniFile Full Text Mega Edition, that contains full text for 1,700 of the 2,700 periodicals indexed. This number is about half the titles indexed and in full text reported by Ebsco and ProQuest in their most comprehensive product offerings.

The nomenclature is confusing. Wilson uses the terms *mega* and *select* to differentiate between the two versions of this product. OmniFile Full Text Select contains *only* the 1,700 full-text titles, and these are drawn from the ones that also are included in the separate subject databases. Again, both files offer less depth than those of the big producers, with full text only as far back as 1994.

OmniFile Select is the best buy in the Wilson line, and users will appreciate a database that contains only full text. Except for school libraries, where special pricing is provided, Wilson does not link the cost of its subject databases to the size of the library's constituency as other database producers do.

WilsonWeb has been redesigned technically for improved flexibility and performance and offers the capability to link from citations to full text in sources outside Wilson databases for e-journals to which libraries subscribe. Chapter 3 has a section that describes how Wilson's external links work.

Wilson does not yet provide full text or links to text for older articles either in its retrospective subject indexes or in Reader's Guide Retrospective, though it has a long-term plan to do so. Links are offered to the OPAC, but Wilson does not supply records, as the bigger producers do.

Gale/InfoTrac

Thomson International, the Canadian parent company of the Institute for Scientific Information, acquired the Information Access Company (IAC) in 1994 and added Gale Research to its holdings not long afterward. In an internal reorganization, Thomson created the Gale Group in 1998. This realignment associated the old-line reference publisher with IAC and Primary Source Media, another new acquisition specializing in historic texts.

In the mid-1980s, IAC was a bold newcomer to the library information business, introducing what was then a cutting-edge, laser-disk-based abstracting and indexing service called InfoTrac. Through the '80s and early '90s, IAC built a strong customer base in public and academic libraries that followed InfoTrac as an aggregated database into the Web environment.

Librarians who teach undergraduates how to search for information are fiercely loyal to InfoTrac because of its intuitive interface and its approach to subject searching. The interface is ideal for demonstrating the importance of a controlled subject vocabulary. The subheadings define a research topic and show how subject headings can be used to expand or refine the scope of a search.

Controlled vocabulary subject searching with cross-references is at the heart of IAC's approach to information discovery. To emphasize a quality librarians have praised, Gale presents depth and breadth of subject indexing as the core value of the InfoTrac product line.

The company also cites the underpinnings provided by a unified, hierarchical vocabulary as critical to its future direction: the ability to integrate periodical content within the InfoTrac databases with the material in the extensive suite of Gale reference tools.

OneFile is Gale's biggest database. It is composed of the content from the various subsets of InfoTrac developed for different market segments. More than 7,200 titles are indexed with full text provided for 3,700 periodical titles of all types. News sources include close to 100 newswires and indexing for five major newspapers, though Gale reserves its master full-text newspaper archive, InfoTrac Custom News, for sale as a separate product.

Expanded Academic ASAP is Gale's primary product for colleges and universities, with indexing for about 3,000 serials with 1,700 in full text. Other databases target the community college, public, and school library markets. The lead product for public libraries is General Reference Center Gold.

Despite their enthusiasm regarding the interface, academic librarians have been concerned about the content of Expanded Academic ASAP, citing inadequate coverage of scholarly journals and too many citation-only hits for newspapers, newsletters, and trade magazines.

To improve its coverage of scholarly literature, Gale signed an agreement in 2001 with Ingenta, the U.K.-based journals aggregator. Ingenta (described in more detail below) has strong holdings in peer-reviewed academic journals especially in scientific and technical areas. With the recent acquisition of its competitor, Catchword (also a British company), Ingenta has added important titles from smaller academic publishers and professional societies.

Gale's agreement with Ingenta allows searching of InfoTrac content along with the more than 5,400 titles in the Ingenta database through the InfoTrac interface. Now that the process of integrating records for Ingenta articles has been completed, searchers using OneFile and Expanded Academic ASAP can link to articles and text on a dedicated Gale server at Ingenta.

As is the case in any situation where aggregators link to full text outside their own databases, libraries will have access to the full text in Ingenta only if they are subscribers to the title. Libraries must register the titles they want to access with Ingenta.

Online ordering of articles from journals to which libraries do not subscribe also is possible through Ingenta. (ProQuest and Ebsco offer links to Ingenta, too, but in a different way.) The Ingenta partnership greatly expands the content potentially available to users of the largest Gale databases.

Like all the other major aggregators, Gale provides libraries with cataloging to be used in OPACs for journals indexed in the InfoTrac databases. Though the records meet CONSER guidelines for cataloging e-resources, they fall into the third choice category of acceptability, since they are machine-generated.

Gale makes much of the fact that articles in its databases have persistent URLs called InfoMarks. Ebsco and ProQuest databases also employ persistent URLs. ProQuest calls them durable links and Ebsco uses them as a basic building block of its service without advertising their existence. Gale InfoMarks allows users to cut and paste article URLs into other applications such as coursepacks and reserve lists.

ProQuest

Bell and Howell/UMI/ProQuest has gone through two name changes in the last few years to slough off associations with its historical role as a producer of filmstrip projectors and microform collections. Its first choice, Bell and Howell Information and Learning, lasted only a short time. The company has now decided to use the familiar ProQuest name for its electronic information division.

CONSER,
[www.lcweb.loc.gov/
catdir/pcc/aggfinal.html](http://www.lcweb.loc.gov/catdir/pcc/aggfinal.html)

Persistent URL: A persistent URL allows an article to be more or less permanently identified for linking purposes and to be cut and pasted into other applications.

MARC: Machine Readable Cataloging

All three aggregators have a mechanism for rerunning saved searches to provide **current awareness services** for users on topics of interest.

The historical material ProQuest has amassed during its long years as a microfilmer, however, is critical to current and future product development. Digital Vault, the name ProQuest has given to its program to digitize this material, sets the tone for the strategy used to market its more current aggregated periodical databases. ProQuest wants its name to be associated with quality and quantity of content.

ProQuest's great big file, ProQuest 5000, provides indexing for more than 7,400 titles with 4,000+ in full text. The modules that make up this megafile also can be purchased separately. Next in size and aimed primarily at the academic market is ProQuest Research Library, which packages indexing for 2,500 titles with full text for 1,700 serials in 16 modules going back to 1986.

ProQuest's primary database for public libraries is ProQuest Newspapers and Magazines. The company has a strong emphasis on business information with its own database, ABI/Inform, and through its role as the distributor for Dow Jones.

ProQuest offers MARC records that can be linked to and from journals in the databases. It goes one step further than Gale by offering a guided Web page composer with templates to aid in creating applications for employing persistent URLs. Librarians can use this tool, called SiteBuilder, for various purposes including, for example, creation of an alphabetic list of the titles in ProQuest for display on the library's website. SiteBuilder also can be used to set up current awareness and table of contents services for patrons or to generate e-reserves lists.

ProQuest's CrossLinks feature allows access to full-text articles indexed but not available within the database from external sources to which the library subscribes. ProQuest partners with SwetsBlackwell to link to articles in subscribed titles via its journals gateway SwetsWise Online Content. CrossLinks, which also permits links to extended services, is limited to 25 customer-supplied targets.

Ebsco

Ebsco, like Gale and UMI/ProQuest, has been in the library business for decades, though its traditional role has been as a library subscription agent. Even though it is a relatively late-entry player in the large-scale electronic content provision business, Ebsco has succeeded in creating a suite of highly competitive databases in a remarkably short time.

EbscoHost is the company's megafile of 8,700 journal titles and other materials from which various products for different types of libraries are generated. Unlike Gale and ProQuest, Ebsco does not sell a giant product based on the EbscoHost database. Ebsco's equivalent to OneFile and Proquest 5000 is its suite of Premier databases.

Ebsco offers three major databases for academic libraries: Academic Search (available in two versions, Elite and Premier), Business Source (also available in Elite and Premier versions), and Health Source (available in two versions: Consumer Health and Nursing/Academic). Business Source and Health Source also are meant for public libraries, but publics usually choose Masterfile Premier instead of Academic search. The Premier databases have more full text titles and, in some cases, deeper backfiles than the Elite versions.

Ebsco has been aggressively and systematically adding new titles and extending coverage of earlier years in both the Elite and Premier versions of Academic Search and Business Source. The company aims, in particular, to have

Business Source replace ProQuest's ABI/Inform as the leading business periodicals database. In contrast to Gale and ProQuest, which both have substantial investments in regional and national newspaper coverage, acquisition of additional expensive newspaper content is not an important goal for Ebsco.

Ebsco's objective is to create the broadest and deepest journal content within its own databases and to provide effective mechanisms for linking to texts of articles in external sources. For academic customers, the goal is to provide the most comprehensive collections of peer-reviewed journals with the most extensive backfiles. Preferred format for articles is portable document files (PDF) scanned in color when this format enhances usability. Native (searchable) PDFs also are common.

The amount of content that Ebsco can link to is enhanced by the journal gateway service, formerly called Ebsco Online, which was built by the subscription side of the business in 1998.

The two names for Ebsco's services, EbscoHost and Ebsco Online, have been a source of confusion. EbscoHost is the company's one big file of leased content, which is the source for its various databases. Ebsco Online has functioned as a source for links to titles outside EbscoHost. Chapter 3 describes how Ebsco has used the information contained in these two products to develop a comprehensive e-journals management solution.

Through SmartLinks EbscoHost databases (such as Academic Search, Business Source, and Health Source) have the potential to link to more than 14 million full-text articles in 12,000 electronic journals. Since Ebsco is not only the producer of the EbscoHost databases but also an aggregator of databases searchable through a single interface, the linking capabilities supported by SmartLinks also are present in any third-party databases libraries purchase through Ebsco (such as PsychArticles, CINAHL, and MLA International Bibliography).

SmartLinks' distinguishing characteristic is that the links are prevalidated for journals purchased through Ebsco and appear on the results and abstract pages of searches only if full text is rights-cleared and available.

EbscoHost databases also feature CustomLinks (also called ILS Links), which permits linking from citations to extended services such as interlibrary loan and document delivery. CustomLinks allows direct links backward and forward from OPAC records to journal titles. CustomLinks also can be used to generate searches from citations in result sets to bibliographic utilities (such as WorldCat) and to search engines (such as Yahoo and Google).

Ebsco provides MARC records for titles in its databases and worked closely with the CONSER Program on Cooperative Cataloging to produce standards for aggregator-provided OPAC records. Ebsco was the first aggregator to deliver fully CONSER-compliant records and is a CONSER commercial affiliate, as is Bowker.

Reliability of content

Recent developments have focused attention on the scope, stability, and currency of aggregated products. Competition continues to increase among general periodical database producers to acquire the best journals in various fields. Both aggregators and publishers have interests to protect as they make agreements, and the stakes for both may be high. Large sums of money may change hands, since contracts for journals viewed as critical may sometimes involve several million dollars.

CONSER,
[www.lcweb.loc.gov/
catdir/pcc/aggfinal.html](http://www.lcweb.loc.gov/catdir/pcc/aggfinal.html)

Unnaturally halted titles are journals for which full text is not current within the database due to the vendor's loss of rights. The producer may decide to continue indexing even though full text is no longer available. The listserv debates revealed that some aggregators' title lists were less accurate than others.

Because aggregators generally do not own but must license the content in their databases, they may be required to agree to a set of terms that publishers feel comfortable with, though these terms may not be advantageous to their library customers.

Librarians want databases to have the content their patrons need. They also want that content to be stable and up-to-date. Aggregators, however, must sign contracts with suppliers that have clear end dates and specify terms that may limit (or embargo) access to the most recent issues of journals.

In addition, aggregators or suppliers (or both) may seek an exclusive arrangement where a journal appears in only one of the major aggregated databases. Libraries that want to use aggregated databases as substitutes for individual subscriptions find this situation frustrating and blame aggregators for failing to deliver what they believe they have been promised.

Embargoes

Journal publishers make money from the sale of rights to aggregators, but their primary source of revenue is from journal subscriptions, whether print, electronic, or both. Publishers are fearful that electronic access will result in significant cancellations so, to guard against current subscription loss, they may decide to provide aggregators with only older issues, thus requiring libraries and readers to subscribe to either the e-journal or the print to obtain the most recent material.

Most current-issue embargoes range from six months to a year, although some journals in databases have longer embargo periods—a few even withhold the latest material for three years. Social science and business publishers tend to impose longer embargoes than science publishers, since they believe current research and writing in their areas draws more heavily on material going further back in time than in scientific, medical, and technological fields, where the latest findings have the most value.

The embargo issue received a lot of exposure in spring 2001 when Nature Publishing announced its plan for marketing its family of online journals. Nature proposed that institutional subscriptions would have up-to-date coverage of peer-reviewed articles but a three-month delay on the much-read features, news, and reviews sections. Advertised subscription costs were high in comparison to peer journals and permanent access was not a feature of the license.

Academic libraries were outraged and rallied with their own boycott on the purchase of Nature's journals. Owing to this rare instance of a highly concerted effort, Nature was forced to revise its marketing strategy, to lower its prices, and to remove the three-month embargo. The incident shows that libraries working together can use their power of choice to influence the business practices of an important publisher.

The Nature dustup and its aftermath caused librarians to realize that the aggregated databases they were paying high prices for did not contain current months or years for some important journals. Librarians began checking title lists on aggregator websites to make comparisons. Complaints were voiced.

A series of heated listserv exchanges ensued among representatives of the major database producers about which had the greatest number of embargoed titles and whether each was accurately representing journal currency on website title lists. Unnaturally halted titles emerged as another category of content absent from some databases.

Sam Brooks, senior vice president for sales and marketing at Ebsco, wrote as follows about why publishers cannot depend on aggregators alone to survive and why they may want to use embargoes to protect current subscriptions:

A publisher may charge \$2,000 per year for a paper subscription...[and the] journal may be available through a full-text database containing a total of 1,000 journals. If the library pays \$20,000 for that database, its cost per journal is only \$20. If [libraries cancel subscriptions], even if the journal aggregator shared every penny collected with the publishers...This would mean that the publisher would collect 1% of their actual subscription price (an infeasible 99% discount).¹

Brooks also urges librarians not to undertake massive print cancellation programs. He argues widespread losses of subscriptions would cause a vicious cycle. Publishers would ask for higher royalties or withdraw more content from aggregated databases, thus reducing quality or increasing price, or both.²

Concern over current content absent from databases continues, despite publishers' and aggregators' efforts to explain the economics of aggregation and the need to protect subscription income. Though aggregated databases will continue to contain embargoed titles, the public airing of the topic made clear that, except in extraordinary cases, a limited-access title has the same embargo in all aggregated databases. The ongoing discussion has improved accuracy of vendor title lists, at least to some extent, and also has served to heighten librarians' awareness of the limitations of aggregated databases.

Exclusives

As aggregators began to pursue new titles more aggressively to improve their competitive position, some set out to sign exclusive contracts with certain publishers. At the same time, some publishers took the lead in offering exclusives to an aggregator willing to pay an inflated price.

As a practical matter, when a publisher who has never worked with an aggregator before is finally convinced by one vendor to test the waters, the result is a de facto, though perhaps not a contractual, exclusive. This situation occurs, for example, when the aggregator offers to digitize journals previously only available in print on behalf of the publisher.

Librarians deplore the existence of exclusives in aggregated databases, arguing that exclusives force them to subscribe to multiple databases to receive all the journals they need. Given the highly competitive nature of the full-text database business, exclusives both intentional and de facto seem unavoidable.

Libraries wanting e-access to a particular journal do have the option of ordering an online subscription if the publisher provides that option, or they can obtain needed articles via document delivery.

Volatility

Aggregators dislike instability in their databases as much as librarians do, or perhaps even more. The content in aggregated databases does change, and the most important journals are likely to be the most volatile.

Aggregators normally seek three- to five-year agreements with content providers. Publishers expect certain benefits and protections from the licenses they sign and may have legitimate business reasons for withdrawing titles from aggregated databases. For example, if a database producer relicenses its content to a third party without permission, the publisher might have

grounds to terminate its contract immediately (the origin, sometimes, of unnaturally halted titles).

A publisher might decide not to renew if not satisfied with use of the journal in the database. Also, many journal producers, large and small, have experimented with electronic distribution by leasing their material to aggregators while deciding whether to build the infrastructure to market their product directly to customers.

Sage Publications, for example, leased its journals to Ebsco and ProQuest with an embargo of one or even two full years to protect print subscriptions. Sage maintained this arrangement with both aggregators for about 10 years.

In 2003 Sage Publications partnered with Cambridge Scientific to bring out a suite of specialized databases with 20-year backfiles in communications studies, criminology, sociology, and other social science fields in which it is strong. It then withdrew both current and back issues from all aggregated databases. Sage cited noticeable cancellations since placing its titles with aggregators as the primary reason for this move, but a desire to gain greater visibility and to earn new income likely were important factors in its decision.

The only response available to aggregators for loss of content is to replace it with substitute material of similar quality. Unfortunately for researchers who view certain journals as the top in a field, no substitutes are available.

If libraries are willing to maintain print subscriptions to Sage journals, they can access the unembargoed version through journal aggregator intermediaries such as EbscoHost Electronic Journals Service, SwetsWise Online Content, or Ingenta. The alternate choice for obtaining access to all Sage journals is to buy all the new CSA/Sage products.

Selective content in aggregated databases

Aggregators undertake to provide the articles of substance from a journal or magazine, but they do not pretend to include everything. Many materials are normally omitted, including short pieces, letters to the editor, commentaries, and sometimes book reviews.

Aggregators' journals also cannot provide articles when the author maintains the copyright. The Supreme Court's 2001 decision in the *Tasini* case has led to the removal of many author-owned articles from news, business, and aggregated databases.

In 1993 Jonathan Tasini, president of the National Writers Union, and five colleagues sued the *New York Times* and other major newspapers, magazines, and online information providers for infringing on the copyrights of freelance authors by distributing their articles online. Articles in popular magazines have been the main losses from aggregated databases.

Some pieces simply are left out of the electronic versions of journals due to inevitable technical glitches or in other unintended ways.

Can print journals in aggregated databases be canceled?

Buying full-text databases makes excellent economic sense for libraries. Libraries receive many titles at a fraction of the subscription cost per title and, in many cases, have access to journals they previously could not afford. Aggregators and publishers agree, however, that the economics of journal production and distribution require that publishers not lose large numbers of subscriptions when they place their journals with aggregators.

In a necessarily simplified analysis, Ian Jacobs of London-based Palgrave/

MacMillan Publishers points out that aggregators pay publishers about a third of the income they receive from offering their journals in databases. Thus, if libraries all canceled their individual subscriptions, publishers would lose two-thirds of their revenue and could not survive.³

In the e-mail quoted on page 13, Sam Brooks of Ebsco warns that if libraries cancel subscriptions, then publishers will ask for higher royalties and aggregated databases will be less comprehensive and less affordable.

The financial facts are more complex than can be portrayed in a single paragraph, but Brooks and Jacobs' calculations are reasonable representations of the dynamics of the e-journal marketplace. Can individual libraries really factor these kinds of big-picture considerations into their decision-making, especially in an era of increasingly tight budgets?

The reality for many libraries may be that they cannot both pay for aggregated databases and maintain all the print and online subscriptions they cover. On the other hand, collection stewards need to make clear-eyed decisions about their libraries' holdings based on an understanding of the e-information marketplace:

- Aggregator licenses for journals are specified time periods. Publishers or aggregators may not want to renew a license for legitimate reasons. Aggregators make no guarantees of permanent access.
- Journals are rarely reproduced cover to cover in aggregations. Different kinds of content may be missing from different kinds of journals for different reasons. (Though embargoes apply equally to all suppliers, the images in an article, for example, may be present in one database but not in another.)

Aggregators exist to perform an important function that is governed by definite operating and financial necessities. Libraries need to understand and acknowledge these realities when considering cancellation decisions.

How to decide which aggregated database is best

Librarians should ask these questions before choosing an aggregated database:

- Who are the patrons to be served and what kinds of information do they need?

In an academic library: Do you expect the product to be used primarily by undergraduates mainly for general information and the preparation of term papers or also by upper-level and graduate students (and possibly faculty) for more advanced research? What subject areas are most important to support?

In a public or school library: Do you expect the product to be a one-stop shop for almost all your patrons' needs, containing periodical, reference, newspaper, and biographical information as well as primary source material?
- Since different aggregators stress different types of materials, are certain kinds of titles particularly important for the patrons? (For example, Gale offers extensive coverage of newsletters and trade association publications. A wider selection of full-text newspapers is likely to be available in ProQuest 5000 than through EbscoHost or InfoTrac OneFile. Ebsco may have more peer-reviewed information needed by patrons, particularly in

the sciences, social sciences, and business.)

- How will the database selected relate to your print collection, now and in the foreseeable future?

Start with a basic needs assessment and then develop a strategy for choosing the database that comes closest to matching your requirements and your budget. Here are some well-established basic steps to follow:

1. Set up a trial.

Vendors are always amenable to 30-day trials and normally don't object to extending them. Test the product systematically with sophisticated and naïve users. If possible, invite patrons to try the database in a controlled situation. For staff evaluation, use real-life queries and require testers to record their search strategy as well as their results. This method tests the interface as well as topical areas in which the database may be weak.

2. Review content.

The discussion of embargoes, exclusives, volatility, and reliability of information on vendor websites underlines the difficulty of comparing databases minutely as to what they contain. Database producers, however, are well aware of the titles they have that their competitors lack and should be willing to share comparative information with you.

Check to see if specific titles you regard as important are included in the database and what coverage is offered. But don't expect every title you want to be in one database.

Pose questions about the vendor's content acquisitions program. Ask how new titles are chosen and request a description of standards used to judge quality and importance. Are particular areas targeted for development and why? Observe whether the vendor is willing to acknowledge weaknesses in certain areas and to describe steps planned to correct them. Is there a strategy in place for responding quickly to loss of content due to unanticipated withdrawal by publishers?

3. Read product literature and proposals carefully.

Both product literature and the responses vendors submit to requests for proposals (RFPs) are marketing tools. Read them with the same caution as other forms of promotion. Content may be misleading and obscure either by design or, under the most generous interpretation, simply because of a lack of careful attention on the part of the seller. In a response to an RFP, a vendor may describe at length the one big file as well as the subset they are specifically offering to your library or consortium.

The description of a more expensive product than the one on offer may be just part of the company background boilerplate and not intended to deceive, but evaluators should fully understand what they will be receiving for their money. A noticeable lack of clarity and consistency in the vendor's description of products in both brochures and proposals should be factored into the overall assessment.

The absence of a characteristic that is pushed as a selling point for one vendor's product may not be a defect in another's, though at first it might seem so. A feature described with great fanfare in Supplier A's proposal may not appear at all in write-ups of Supplier B because B regards it as so basic as to not be worth mentioning.

Despite their best intentions, the names aggregators assign to products or

features can be more confusing than illuminating. When products change, vendors may want to retain the name recognition of the older version and yet show that something new has been added.

Modifiers also are necessary to differentiate levels of completeness or some other variation in characteristics. Adjectives, prefixes, and suffixes proliferate: ASAP, Expanded, Elite Premier, Plus, Ultra, Mega, Omni, Select, Complete, and so on. Names or acronyms also are used that have historic significance and serve as a shorthand identifier within the company but are hard for outsiders to grasp.

Ask as many questions as needed to eliminate uncertainty. Follow the rule that no question is too dumb or detailed to ask. Judge vendors by their willingness to explain all aspects of their product or proposal candidly, completely, and in writing if necessary. Urge them to make feature-by-feature comparisons, if possible, with competitive products.

The knowledge, skills, and attitudes of sales representatives tell a lot about a company. Even if representatives are responsible for an extensive and varied product line, they should understand and be able to explain all facets of the product you are buying. They also should be able to provide accurate, firm cost information and to spell out the calculations that produced the proposed price.

4. Review features.

Added-value features may be an important factor in the ultimate choice and here, too, buyers should be sure they understand the full picture. Check out the features as well as the content and search functionality. Look at the administrative module to see how difficult setting up different functions will be and whether they will work as advertised.

Is a saved search run for the patron automatically or does it have to be initiated? How good are the online help modules? Which provider supplies the use statistics you need, and what do you have to do to receive them? Will they be in an easy-to-use form that is adaptable to local needs?

5. Consider the vendor's objectives.

The three major producers of aggregated databases have all been in the library information business for a long time. They are engaged in an intense competition to convince libraries that their products have the highest number of the best titles. Each has a somewhat different outlook, goals, and market position.

ProQuest has a broadly based, highly diversified set of offerings. With its own store of microform holdings and its acquisition of Chadwyck-Healey, it has a major investment in historical texts. Having purchased Safari, ProQuest is now in the business of delivering e-books on computing. Buying BigChalk opens a new avenue to K-12 customers. Xanadu allows ProQuest to sell content directly to students through coursepacks.

On the content front, ProQuest seems to be fighting a losing battle to maintain ABI/Inform's market position. It has licensed new content from publishers such as Wiley, Kluwer, and MCB. It also has folded its Trade and Industry and regional and local publication databases into ABI/Inform. ProQuest has produced the ABI/Inform archive, with backfiles for around 40 journals, but it markets this database as a separate product.

Ebsco Business Source Premier has 500-plus more peer-reviewed titles than ProQuest's ABI/Inform, many of which are among "the most prestigious academic journals."⁴ Ebsco also has made no-cost backfile additions to more than 300 journals in Business Source Premier.

ProQuest does not present itself as a low-cost solution. Its catchphrase is that the customer receives a premium product for a premium price. As with any high-end purchase, the buyer must decide if the added-value claims are real and worth the extra money.

Gale has made major commitments to the Ingenta partnership and the development of Total Access, its engine for searching multiple databases from different vendors. The company stresses subject control as its core value and has been slower to develop a robust infrastructure to link to text and services outside its own aggregated databases. Its acquisition of new linking technology should lead to improvements in this area.

Gale also seems to have focused less on the kind of added value features provided by others aggregators, such as Web page builders and highest-standard OPAC records for e-titles.

Gale has been buying reference publishers and new tools. Sample acquisitions are K. G. Saur, American Men and Women of Science, and the Internationale Bibliographie der Zeitschriften. The company wants to develop compelling products for the online market based on its large print reference book inventory.

Gale envisions an array of databases containing both periodical and reference information. History Resource Center and Literature Resource Center are representative of the type of product it envisions. Each has full text periodical articles, excerpts from Gale reference tools, licensed content from other sources, and links to authoritative subject websites. A tightly controlled thesaurus-based unified vocabulary to enable cross database searching is a critical part of future plans.

The acquisition of Primary Source Media has positioned Gale as a competitor to ProQuest in the historical texts arena. In 2002 Gale launched The Eighteenth Century—Complete Digital Edition, a project to digitize 12,000 reels of microform over three years eventually producing an archive of 20 million pages.

Ebsco has built a more compact and interconnected information universe than its competitors. Since serials are Ebsco's business, the company has at its disposal a large store of journal information in its database of licensed material and its journals gateway file. The primary focus is on delivering content and providing e-serials management capabilities.

Ebsco developed effective mechanisms early on for linking to information and services outside its own databases and has the most robust linking infrastructure of the three aggregators. At the same time, it has licensed databases from other producers to add to the interlinked information searchable through the Ebsco interface.

Ebsco is extending its linking capabilities and developing the Electronic Journals Service (EJS), a comprehensive journals management program (see Chapter 3).

Package offers to consortia and add-ons for individual libraries are priced to sell. Ebsco also seems to have been actively involved in essentially every cooperative project of vendors and libraries designed to improve access to e-information.

Journal gateways and journal aggregators

In the past, full-text aggregators provided access only to content contained within their own databases. But linking technologies allow database producers to extend the reach of their abstracting and indexing services to full text available elsewhere through other, newer types of content aggregators. These nontraditional aggregators include what might be called journal gateways and journal-hosting aggregators (with some playing both roles).

The distinction between EbscoHost (Ebsco's aggregated database file) and the old Ebsco Online illustrates the difference between a traditional aggregator and a journal gateway service. Ebsco Online had been the name used for Ebsco's gateway service. Ebsco Online has merged with EbscoHost. The combined product is described in Chapter 3.

A gateway service provides a convenient way for libraries to access e-titles housed on the gateway or to subscribed titles on the publisher's website. Swets/Blackwell has a similar gateway service, SwetsWise Online Content (formerly called SwetsNavigator). Through an agreement with Swets/Blackwell, ProQuest links to SwetsWise Online Content to provide access to content in library e-journals collections.

The rapid growth of e-publishing also has led to the development of hosting aggregators, organizations that help publishers who are not able to create online versions of their titles on their own. These outfits, some of which are detailed below, include Ingenta/Catchword, Highwire Press, and BioOne.

Closely related to hosting aggregators, whose distinguishing characteristic is their provision of publishing services, are what might be called journal aggregators; that is, entities that put together not necessarily homogeneous collections of journals for sale. OCLC's Electronic Collections Online (ECO) falls into this category, as do JSTOR and Project MUSE. All these services provide some level of searching capability though, in some cases, not as sophisticated as that offered by aggregated databases.

OCLC's Electronic Collections Online (ECO)

OCLC has been a major force in bringing libraries into the online world and continues its contributions as a database and journals aggregator. In the early 1990s, as part of its continuous research on information retrieval and distribution, OCLC created the Electronic Journals Online (EJO) program, a pre-Web experiment in the computerized production and delivery of serials.

Feedback from pioneering EJO customers and the program development experience laid the foundations for the Web-based Electronic Collections Online (ECO) launched in 1997. What OCLC learned from EJO is that users want a critical mass of journals searchable via the same interface, that electronic journals need to be integrated with other electronic resources, and that library buyers want permanent access.

What OCLC now offers through ECO is full text of more than 4,000 journals from close to 100 publishers. The collection is searchable via the FirstSearch interface both as a freestanding collection and through links from more than 35 of the 70 databases OCLC delivers through FirstSearch.

Libraries can choose to subscribe to any or all of OCLC's journals either through the Print Subscriber Program or the Journal Licensing Program. Under the Print Subscriber Program, publishers provide no-charge electronic rights to libraries that want or need to maintain a print subscription.

The Journal Licensing Program covers titles whose online versions are not free with a print subscription. Under this ECO program, publishers charge a fee either for adding electronic rights to a library's print subscription or to cover an e-only subscription if that is preferred.

OCLC charges an account management fee under both programs ranging from \$12 to \$20 per title depending on the total number of ECO subscriptions. In most instances, when libraries pay publishers directly for electronic rights (as in the case of Project MUSE, for example) they also may access these titles via ECO.

ECO is unique because it offers not only access but permanent ownership, which is critical to libraries. Assuming an honest broker role based on its position in the library community, OCLC stepped forward to guarantee the existence of permanently archived electronic journals so libraries can cancel print subscriptions if they wish. Centralized archives are maintained and backed up on site, remote backups are in place, and migration from obsolete formats is promised.

Ingenta

U.K.-based Ingenta (with whom Gale is partnering) is a hosting aggregator and journal gateway that offers access to 5,400 titles (and counting). A former investment banker founded Ingenta with backing from London venture capitalists. Its name, which means enormous in Greek, declares high ambitions.

Though the emphasis is on science, technology, and medical (STM) journals, offerings include journals from many other fields. Through the 2001 acquisition of its competitor, Catchword, Ingenta has added many small publisher and professional society titles to its list.

The company provides services to both libraries and publishers that benefit both. Libraries are offered title, table of contents, and indexing to a wide range of scholarly journals. Electronic access is free to libraries that subscribe in print or online once they register their titles. Libraries create a free institutional administrative account that can be used to notify Ingenta of titles they wish to access through the gateway.

Ingenta does sell certain services to libraries including document delivery. The company bought CarlUncover with its Reveal alerting service, and libraries can purchase current awareness services for users based on Reveal. Ingenta also offers a customized gateway service to help libraries create research portals and to facilitate e-acquisitions functions and track document delivery spending.

But Ingenta does not rely heavily on income from libraries. Publishers pay Ingenta to create and host online versions of their journals and to manage subscriptions and transaction-based access. Fees for article delivery, especially to corporations, are a primary source of revenue.

Ingenta has partnered with many library information providers to produce specialized reference resources. Examples include websites for MacMillan's Grove dictionaries of art, music, and opera, as well as its encyclopedias of life sciences, astronomy, and astrophysics.

Ingenta also has worked with the Organization for Economic Cooperation and Development (OECD) to develop a Web presence and with CABI Publishing to create specialized subject-based gateways.

Ingenta gives academic libraries a no-cost, convenient way to provide access to electronic subscriptions. Its search interface also can be used as a general-purpose interdisciplinary index, though it lacks some of the sophisticated capabilities of products designed to serve as abstracting and indexing services.

Other aggregators of academic journals

Project MUSE

Project MUSE, like JSTOR, was an early journal digitizing project funded in part by the Mellon Foundation. It originally included only the 40 or so titles published by the Johns Hopkins University Press and has now expanded to more than 200 publications (with a commensurate increase in cost). MUSE, with its focus on current literature produced by academics, has not diversified its readership beyond colleges and universities.

HighWire Press

HighWire Press, a project of the Stanford University libraries, began in 1995 to provide electronic access to major STM journals. HighWire was inspired by fears that scientific societies might be unable to make the expensive transition from print to online production and distribution of journals on their own.

HighWire produces more than 300 STM sites. Partnering with professional and scholarly associations, HighWire offers the technical infrastructure and expertise to create journals that move beyond simple replication of the printed page in electronic form. Links among authors, articles, and citations; interactivity; and high-resolution images and multimedia add innovative dimensions to HighWire journals.

In addition, HighWire and many of its partners subscribe to the view that the communication of scientific information should be as barrier-free as possible. Much (though not all) of the archive of journal backfiles is available free worldwide. HighWire also is involved in an electronic archiving initiative called LOCKSS (Lots of Copies Keep Stuff Safe), which is described in Chapter 3.

JSTOR

JSTOR fits into the category of a journal aggregator since it hosts a large collection of unrelated journals. It is unique because this aggregation was created through a massive, ongoing digitization program. Conceived as a model project, JSTOR has been a stunning success in ways unforeseen by its creators.

Funded by the Mellon Foundation in 1995, JSTOR was one of the earliest programs for digitizing journals. The goals of the project were to increase access to and preserve older journal issues, and at the same time give libraries the opportunity to save the cost of binding and storing backfiles.

Starting with a selection of 10 economics and history journals, JSTOR has grown into a file of almost 300 journals containing almost 2 million articles. Subject-based collections are offered with pricing based on size and type of library. Consortia are not eligible for discounts, but group licensing is available for administrative convenience.

Though JSTOR seems to have the most to offer to big, research-oriented institutions, many smaller college and university libraries, community colleges,

HighWire Press, <http://highwire.stanford.edu/about/intro.dtl>

JSTOR, www.jstor.org

government agencies, foundations, museums, and other cultural agencies are among its almost 1,000 U.S. participants.

JSTOR's relatively low cost allows smaller academic institutions to provide students and faculty with materials previously available only at research libraries and has increased opportunities for distance learners on all campuses that subscribe. JSTOR has opened up the use of older materials in teaching at the college level and also is encouraging possibilities for use in secondary schools and public libraries.

Only a small number of public libraries are current subscribers, but more might want to consider this opportunity for serving students, lifelong learners, freelance writers, and independent scholars in their communities. JSTOR continues to add new collections on a regular basis, including, for example, the remarkable record of the history of science contained in its General Science Collection.

To reassure journal publishers that they would not lose revenue through subscription cancellation, JSTOR's original plan was to digitize backruns from the beginning date of the journal to a point mutually agreed on by the publisher: usually five years from the current year. So, to see all the issues of a title, the reader must visit JSTOR for the older issues, and view current issues on a different site. Ideally the two locations should be linked, and JSTOR is working, at least with Project MUSE, to create these links.

JSTOR is committed to provide a trusted archive so those libraries wishing to regain space in their stacks by withdrawing older volumes might do so with confidence. Surveys of participants have been conducted in 1999, 2000, and 2002 to gauge the extent to which the existence of the JSTOR archive has led libraries to withdraw bound volumes, remove them to offsite storage, or cease binding current issues.

Although the survey results do show some impact on the management of print collections in participating libraries, most libraries are still maintaining bound volumes of the core journals in JSTOR's collection.

To complement its pledge to maintain its electronic archive in perpetuity, JSTOR is partnering with the Center for Research Libraries to coordinate creation of a corresponding print archive. This development, along with an increasing willingness to substitute online for print for current journal access, may eventually have an impact on subscriber library policies regarding bound volumes.

Now a mature project, JSTOR demonstrates the challenges producers face in maintaining large files of electronic journals. Problems for the producer include acquiring rights to full runs of serials to digitize, integrating the digitized material into broader information delivery systems, and ensuring perpetual access to the electronic archive.

Pricing for the collections specify an archive capital fee to defray the costs of digitization as well as an annual access fee. Significant additional outlays will be required in the future, however, to ensure the existence and integrity of the archive. Digital preservation issues are treated in Chapter 3.

Academic Press

Though Academic Press is now part of Elsevier's vast holdings, it deserves special mention as a pioneer in the electronic publishing business, in terms of both technical and marketing innovation. A well-respected publisher of scientific journals particularly in the life sciences, psychology, and mathematics, Academic was among the first publishers to offer its full set of journals to libraries as a package, focusing initially in particular on sales to consortia that included libraries of different sizes.

Its marketing strategy had two progressive elements. First, when consortia containing large and small libraries signed up for International Digital Electronic Access Library (IDEAL), the smaller libraries gained access to research journals at a modest cost that they could never have owned otherwise. The second innovation was that the Academic Press Print and Electronic Access License (APPEAL) separated charges for print and electronic journals, allowing libraries to subscribe to either format or both.

On the other hand, the APPEAL model forced subscription to all of Academic's titles and sought to reduce the benefit to libraries from recent cancellations. The base price for an APPEAL license in 1998, for example, depended on subscription expenditures in 1996 computed at 1998 prices, and included copies purchased by departments outside the library.

Other scientific publishers subsequently adopted elements of the APPEAL model as they moved to package pricing. When Elsevier purchased Academic, it also incorporated aspects of the APPEAL approach to pricing.

Elsevier

Since Elsevier publishes more scientific journals than any other publisher, the decisions it makes about marketing and pricing reverberate through the library and publisher communities. The company has collaborated with libraries on early experiments in online information delivery and, more recently, on research into electronic journal archiving.

After years of experimentation and market research in projects such as The University Licensing Program (TULIP) and Pricing Electronic Access to Knowledge (PEAK), Elsevier launched its ambitious ScienceDirect product. Besides offering full text of all Elsevier's journals, ScienceDirect set out to be a large-scale scientific and technical indexing and abstracting service. The greatly expanded next-generation product attempts to be a one-stop shop for scientific and technical information.

ScienceDirect allows simultaneous search of various Elsevier-produced databases (GeoBase, EmBase) as well as resources from other vendors (if purchased through Elsevier), including Biosis and Inspec in the sciences, and PsychInfo and EconLit in the social sciences.

ScienceDirect also provides Scirus, a Web search engine optimized for science information. For libraries that do not want or cannot afford full-service site licenses to their journals, Elsevier still offers ScienceDirect Web Editions, a free service that provides access to current issues only.

Other journal packagers

The other large science publishers (such as Wiley, Kluwer, and Springer) all offer their titles for sale as packages. Large professional societies also have gone into the e-journal bundling business. The American Institute of Physics, American Chemical Society, American Psychological Association, Institute of Electrical and Electronics Engineers, and many others package their titles for sale at terms with varying levels of flexibility and affordability.

Smaller publishers less geared to the research library market, such as Mary Anne Liebert, also offer packages. Many other journal providers (such as World Scientific, Hindawi, and The Company of Biologists) license their titles either as a group or singly for an added charge for electronic access.

Free-with-print combinations

Many publishers are willing to let libraries use the electronic versions of their journals so long as libraries maintain subscriptions to the print. A few examples of publishers providing e-access free with print are Haworth Press, Brill, Arnold, Carfax, Beech Tree, and Humanities Press. Libraries can enter these databases either by linking directly to publishers' websites or by using the services of journal gateways and hosting aggregators.

Free journals

Many projects are underway to break the commercial publishers' hammerlock on research information and library dollars. The Internet makes self-publishing easy and many individuals, governments, and groups maintain journal websites for the public good.

From the librarian's viewpoint, these titles often suffer from a lack of coverage in standard sources, especially abstracting and indexing services, and a failure to adhere to the standards that would allow linking to their contents from other sources. Producers also can offer no guarantee their titles will endure.

Free-access journals, such as those created in colleges and universities, can serve as a useful forum for communication among specialists. But because they lack both the apparatus to integrate into the mainstream of scholarly discourse and a plan for long-term preservation, they are unlikely to have a significant impact on commercial pricing practices.

Concern over the costs of STM journals has generated many large-scale initiatives to make the results of scientific research freely available. The National Library of Medicine provides free access to many articles through its PubMed database. PubScience, created in 1999 by the U.S. Department of Energy and modeled on PubMed, was designed to provide open access to physical sciences literature. The program was dismantled in 2002 in response to allegations of unfair competition with commercial services.

In 2001 a group of interested scientists proposed the Public Library of Science (PLOS) and asked colleagues around the world to sign a pledge that they would not review, edit, or publish articles in expensive commercial journals. Even prominent scientists who signed the pledge admitted that junior colleagues trying to build their reputations could not risk abandoning high-status journals.

The absence of appropriate venues outside the for-profit sector also hampered the realization of PLOS goals. A \$9 million grant to support the creation of new e-journals has given PLOS a new lease on life and has attracted a prominent biosciences editor in 2003 to coordinate the publishing program.

Low-cost alternatives to commercial journals

The escalation of costs for print journals has been a longstanding problem for academic and research libraries. In the short term, the situation has been exacerbated by the introduction of electronic versions because most libraries continue to pay for both formats.

Moving from print to electronic will not relieve the pressures on libraries since annual e-price increases are still more than most libraries can afford to pay. The perceived victimization of libraries by high-profit commercial publishers has provoked the open access to science movement and other responses in both the library and academic worlds.

SPARC

The most visible effort to provide an alternative to for-profit publishing and to educate stakeholders is the Scholarly Publishing and Academic Resources Coalition (SPARC), a program of the Association of Research Libraries (ARL). SPARC has sponsored many initiatives since its formation. Its initial activities centered on partnering with interested parties to produce low-cost alternatives to expensive journals.

SPARC's journals program has resulted in the creation of many low-cost and open-access alternatives to commercial titles in fields such as ecology, engineering, mathematics, entomology, computer science, plant science, and geochemistry.

Probably its most notable success is *Organic Letters*, the journal produced in collaboration with the American Chemical Society and meant to serve as a competitor to Elsevier's high-priced *Tetrahedron Letters*. Figures published by SPARC indicate that *Organic Letters* has made inroads into both the author and subscription base of its Elsevier counterpart and resulted in reductions in the annual price increase.

Another early thrust was the launch of a consciousness-raising program centered on the practices of publishers characterized as price-gouging and monopolistic, and the opportunities available to academics and librarians to effect change. SPARC has made available materials in print and on its website that can be used on local campuses to rally faculty support for new models of scholarly communication.

Institutional repositories: A replacement for commercial journals?

Since high-priced commercial STM journals are sought-after outlets for authors and play an important role in tenure decisions, creating successful competitors is a slow process.

SPARC founders have recognized all along that more than one strategy is needed to reduce the cost of research information. The coalition is promoting institutional repositories as a new approach and launched a major

SPARC, www.arl.org/sparc/home

ARL's white paper promoting institutional repositories, www.arl.org/sparc/IR/ir.html

campaign with publication of a white paper and sponsorship of a workshop in October 2002.

The idea is for universities and other organizations to create and preserve digital archives of their intellectual output and thus potentially eliminate the need for publication and distribution in the commercial realm. These repositories would be part of an international system of searchable archives.

Promoters stress that librarians working on repositories will be active participants in the creation of a new infrastructure for the preservation of scholarship. No longer passive custodians, librarians will set standards for document formats and maintain digital content.

Building on their traditional cataloging role, they will create organizing schemes for electronic submissions and apply metadata. Their critical functions will put them in close contact with faculty and researchers as collection managers and as advisors on document discovery.

Several organizations are already leading the way in the development of institutional repositories. The MIT Libraries began collaborating with Hewlett Packard in 2000 to create DSpace, a durable digital documents archive containing research results produced at MIT.

Surveys during the formative period found that faculty have a strong interest in preserving material in rich media formats (such as images, large data sets, and video and audio files) that they are not normally able to publish in standard journals.

Academic departments also are interested in the potential for support of growing Web-publishing programs. As of 2003, MIT has completed its two-year testing phase of software and protocols development with early campus adopters. The service is now open to all MIT faculty, and the software developed is freely available to any institution wanting to build its own repository.

Other institutional repository programs have been started at the California Institute of Technology and by the California Digital Library. Ingenta has partnered with the University of Southampton to build a commercially supported software based on the e-prints program developed there.

Those working on university-based archives recognize that, as with earlier efforts to reorient the scholarly communication process, the primary obstacle is likely to be apathy and inertia on the part of the faculty. Though all agree that submission to institutional repositories should be made as simple as possible, deposit of material will require an effort the faculty may be unwilling to make.

Taking a realistic view, Ann Wolpert, director of the MIT Libraries, writes:

For the foreseeable future, it is likely that traditional peer-reviewed journals will persist in their historical niche of documenting the record of advances in disciplines. Well-regarded and heavily used e-print services in a variety of subject areas have yet to eliminate peer-reviewed journals as the tool of choice for the permanent record of a discipline. Likewise, faculty will not lightly abandon an evaluation system that has served them reasonably well for centuries.⁵

The future of e-journals

E-journals will continue to proliferate. Aggregators will continue to add content to their databases and to build connections within the various kinds

of databases they produce as well as to external information. Aggregated databases, however, do not offer stable and reliable access, and this situation is unlikely to change since it is based on the underlying economics of the journal publishing business.

Multiple access paths add to the complexity of acquiring online serials but the connections made possible through linking offer new opportunities for improved services. Since commercial producers will continue to be dominant, understanding their approach to marketing products is critical.

The next chapter describes how publishers approach pricing and what buyers need to know to be successful in the e-information marketplace.

Footnotes

¹Sam Brooks, "Integration of Information Resources and Collection Development Strategy," *Journal of Academic Librarianship*, July 2001, p. 316-19.

²Sam Brooks' e-mail to Ebsco customers forwarded by David Carlson to Liblicense-l, March 19, 2001.

³Ian Jacobs and David Bull, "E-journals, Embargoes and Other Matters: Are the Publishers Villains or not?" *Against the Grain*, Nov. 2002, p. 30.

⁴Maura Metisec, "Competitive Edge: A Critical Comparison of EbscoHost Business Source Premier and ABI/Inform ProQuest Direct," *The Charleston Advisor*, January 2003, p. 5-8.

⁵Ann Wolpert, "The Future of Electronic Data," *Nature*, 420, 2002, p. 17-18.