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Would You Like Print With That? -- Will Electronic Reference Packages Supplant Print?

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Would You Like Print With That? — Will Electronic Reference Packages Supplant Print?

by **Frances C. Wilkinson** (The University of New Mexico; Phone: 505-277-4241; Fax: 505-277-7196) <fwilkins@unm.edu> and **Linda Lewis** (The University of New Mexico; Phone: 505-277-7828; Fax: 505-277-4446) <llewis@unm.edu>

This keynote column began in the Reference Publishing Issue of *Against the Grain* in 1997. Over the years the authors have asked librarians and sometimes students and/or publishers a variety of questions of current interest such as: what percentage of reference publishing is electronic vs. print, can you afford both, how do you decide which format to buy, what are the advantages of print vs. electronic, which do you prefer and why, which do your patrons prefer and why, how do you link to e-products, do you keep usage statistics, what are the future trends in reference publishing, and is print being abandoned?

The authors of this column thought that it would be interesting to look back over the last five years to discover how things have stayed the same and how have they changed in an age of information explosion.

Indeed, some areas have stayed the same. Concerns over price increases and inadequate budgets have not only caught the attention of the librarians participating in these columns, but librarians have bemoaned these concerns since at least 1927 when they were reported in *College and University Library Problems*. The other constant is the concern about keeping up with changes in technology. When this column began, the Internet was in its very early childhood and CD-ROMs were still considered an important format. Technology changes so quickly that computers that were state-of-the-art when they were ordered are outdated by the time they arrive in the library. No one knows with certainty what tomorrow's technology holds, although it is the job of librarians to make their best guess.

So, what has changed? Five years ago the question seemed to be "Do we want it in elec-

tronic format in addition to print?" Now the question seems to be "Do we want it in print in addition to electronic format?" Another change is the national drop in reference questions. Patrons are not coming to the reference desk as they used to. Now they are often dialing in to locate reference materials — sometimes in the building from their own laptops! User attitudes have also changed in the last five years. Librarians used to worry that patrons would not use the reference resource in electronic format. Now many students will not use the print format even when the electronic format is down and cannot be accessed.

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If Rumors Were Horses

Well ... it's been a long, hot summer here in Charleston. But that hasn't kept a lot of things from happening!

First and foremost, **Adam Chesler** (Director of Library Relations, Kluwer Academic Publishers) <adam.chesler@wkap.com> and **Marla Whitney** (of the Edgerton, OH Whitneys), and formerly of **CARL**, **Faxon**, **CARL**, **Rowecom/divine**, and **OCLC** are getting married! **Marla's** currently seeking to put her MLS back to work in the Boston area. She and **Adam** haven't set a wedding date yet, but **Marla** sold her house in June (it was in Denver) and moved to Boston after **NASIG**. And, guess what? Their first meeting was at the **Charleston Conference** last year, though **Adam** says he was somewhat distracted by his impending appearance on the "weakest link" panel (which he'll be

appearing in again this year!). Pretty exciting!

More news! **Chris Beckett** <chris@chrisbeckett.com> (once Vice President of Library Services for **Ingenta**) resigned on July 8th to establish **Chris Beckett Associates Ltd.** **CBA**, which opened for business on September 1, is an independent management consultancy offering scholarly publishers, and other industry organizations, advice and research focused on business strategy, business and product development, and sales and marketing. Here's the contact info: **Chris Beckett**, Principal, **Chris Beckett Associates Ltd.**, Box Cottage, Tyte End, Great Rollright, Chipping Norton. Oxfordshire OX7 5RU United Kingdom. Telephone and fax: +44 (0) 1608 730700. Mobile/Cell phone: +44 (0) 7711 849708. Coming soon: <http://www.chrisbeckett.com>.

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This year's column explores a relatively new permutation in reference publishing. Companies such as **Oxford Reference Online** (<http://www.oup-usa.org>), **xrefer** (<http://www.xrefer.com>), **Gale**, **Grove**, etc., are producing online packages that include several reference tools, encyclopedias, and dictionaries. Librarians were asked to address the impact of these types of tools on libraries and their users. The authors conducted an interview-style "joint discussion," asking four multi-part questions of six reference and/or collection management librarians from five institutions. Their informative, thought provoking answers follow.

1. Are you purchasing online reference works? If so, are you providing access through the online catalog, subject Web pages, or other methods? Are you listing the materials by the collective package name or by each individual title within the package?

David A. Baldwin, Director of Zimmerman Library, General Library, The University of New Mexico: "We are purchasing some of these types of materials. For example, we have some directories and encyclopedias through **FirstSearch** and we have access to a health information package funded by the State Library; however, we do not have an extensive collection of this type of resource. We are listing these packages in our online catalog, and on our subject Web pages. We are primarily listing the materials by the collective package name."

Christina E. Carter, Head of Reference Services, Consortium Library, University of Alaska, Anchorage: "The Consortium Library at the **University of Alaska Anchorage** has purchased access to a few individual Web-based electronic reference titles (e.g., *Oxford English Dictionary*). Some reference titles, such as phone books and encyclopedias, have been provided within services such as **FirstSearch**. The Library is part of a state-wide effort to secure online periodical and reference tools for the citizens of Alaska, called the **Alaska Statewide Database Licensing Initiative** or "Databases for Alaskans." A variety of diverse online products have been made available through state legislative funding, including **Gale Group's Health and Wellness Resource Center**. Both of these packages contain numerous individual reference titles.

"The names of these reference packages are given in both alphabetical and subject lists on our library Website. Individual titles within the packages are not listed separately on either our Web pages or in our online catalog, although this could increase their use, or at least generate questions about them from our patrons. We have tended not to list these individual reference titles separately on our

Website if a patron cannot easily and transparently search within the individual titles in the package. We have debated adding these individual reference titles to our local e-journal title finder - which is becoming more of an 'e-resource' title finder."

Mari Katherine Hodges, Head of Technical Services, W.W. Hagerty Library, Drexel University: "W. W. Hagerty Library (**Drexel University**) does purchase this type of material. We have 'Electronic Databases by Title' (<http://www.library.drexel.edu/er/databases.html>) and 'Electronic Databases by Subject' links on the library homepage. As time permits we do add catalog records for major subject collections. In the list of databases by title, the resources are generally listed by the collective package name."

Beth Juhl, Electronic Collections and Services, University of Arkansas: "We did a trial of the **Oxford Reference Online** product and were very enthusiastic. It is a well-designed resource, reasonably priced, and worthy of the **Oxford** name. The **xrefer** free Website is one that we use quite a lot, although we have not investigated their subscription service. However, it is becoming more and more difficult to justify an ongoing budget commitment to a general ready reference product—such as an encyclopedia, an almanac, or a directory—when subject resources, especially electronic journals and articles packages, are what our faculty and students clamor for. The general resources have tremendous potential use, and are names and formats that the librarians trust and will consult. But will the student in search of a birth date, a definition, a country flag, or a population statistic think of consulting a particular database? Or will she turn instead to **Google** or **Yahoo**? Judging by how often I myself will try a quick and dirty '**Google**' instead of walking 20 feet to the *Britannica*, I wonder.

"When we have purchased general reference products, we have listed them both on the Website and in the catalog. We have cataloged the collective database title and also have tried to do some projects to get all the individual titles in a reference package (for example, **Gale's Biography Resource Center**) in the online catalog, as well. Our efforts to date have not been comprehensive; in some cases it is difficult to determine which print edition(s) the online entity corresponds to."

Linda Keiter, Reference Librarian and Bibliographer for Economics and Family & Consumer Studies, and Margaret Landesman, Head of Collection Development, Marriott Library, University of Utah: "We purchase a good many such bundled reference products - some (as a state) through the **Utah Academic Library Consortium** and some (independently) as Marriott Library. And there are an increasing number that we would like to purchase, but have been hesitant to buy. When, like the

KNOVEL titles and many, many others, an electronic purchase means that a title we have bought as a monograph becomes an ongoing serial purchase, we are pretty conservative. If it's an absolutely core title, i.e., the **OED** or **Grove's**, then we purchase. But we are hesitant about getting too dependent on large reference packages we may have trouble supporting in future years.

"Our acquisitions budget has not gone up by leaps and bounds of late. This next year, it's going down - both on the campus and state-wide levels. And we are very aware that reference titles are not our faculty's top priority. Serials are our faculty's top priority. We're also pretty devoted to our book budget. We expect to be buying a mix of print and electronic one-time purchases on the book budget, but we don't want to let it get eaten away by ongoing purchases, either print or electronic, unless we are convinced they are worth the sacrifice.

"We don't think that librarians have gotten to the point of thinking about reference titles in packages yet. Librarians think of reference materials in terms of individual titles, not bundles of titles, at this point. Bundles have to be pretty compelling to command librarian interest.

"Some titles are not particularly easy to use in print and therefore are particularly appealing electronically, such as the many literature series published by **Gale**. Keyword searching means you don't have to go from one set to another. Sets of this type are very appealing electronically.

"We list the electronic packages in the catalog both by collective package name and by individual title. We do also have Subject Research Guides that list resources by subject. And you can sort our database list by subject to produce a list of titles appropriate to a given subject.

"It seems to us important to note that none of this ensures that users will find reference sources. You have to assume users are thinking in terms of books and journals, not reference titles. They will not think of looking for a reference source unless they have been educated by faculty or librarians about the value of these sources."

2. Are you purchasing both print and electronic versions of reference materials? When both print and electronic versions are available in your library, has the use of the print version diminished? Which version do the librarians in your institution prefer? Why? Which version do the students in your institution prefer? Why?

David A. Baldwin, The University of New Mexico: "We are purchasing both the print and electronic version of reference material in some cases. We believe that the use of the print version has diminished when the resource is also available electronically, although we do not have any evidence except

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REMEMBER WHEN?

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interactions at the reference desk. My sense is that both librarians and students prefer the electronic versions of reference materials because they are more convenient to use."

Christina E. Carter, University of Alaska, Anchorage: "As the budget permits, we would purchase such titles if there were enough librarian and/or faculty interest and justification for them. Unlike periodical indexes and databases online, I have not observed that the use of print reference sources has been significantly less than the use of their electronic counterparts. Both print and electronic versions have advantages and disadvantages. Librarians and patrons use one or the other based on their information needs. It's often quicker to scan a page of print text in a reference source than it is to view it online. On the other hand, searching for all occurrences of a phrase or topic in a reference source can be accomplished more quickly online."

Mari Katherine Hodges, Drexel University: "The current mandate (from the Library Dean) is to purchase only electronic versions when available (if electronic is bundled with print we do keep and catalog both the print and the electronic).

"When we have both print and electronic, the analysis of use would need to be on a case-by-case basis, but overall the electronic 'reference' materials look as though they are preferred. One title that stays popular in print is *McGraw-Hill Encyclopedia of Science and Technology*. We also subscribe to **AccessScience@McGrawHill** but many of our users prefer the print or are making significant use of the print.

"There has been no scientific study or evaluation (at Hagerty Library) with regard to the version preference. The engineering and business students and faculty usually state that their preference is for electronic resources. Other disciplines such as library science, mathematics, chemistry and design arts/architecture have stated a preference for print resources. The design arts/architecture is one that I can completely agree with and understand. Graphic arts materials still have a major print function and without high quality, large format printers readily available in the library I think much of this material will remain most useful in print."

Beth Juhl, University of Arkansas: "In the last few years, we have made a conscious effort to migrate to the online version, unless the cost difference is too great or the online version is just not a very good product. We cannot usually afford to sustain both formats, and, like every other library, we see our in-house use and reference queries going down, and our online use going up. I believe students prefer the online version, but I have no hard data to back up such a claim. Certainly online sources are essential for our distant learners. However, in so many cases with ready reference books, it takes a librarian to lead the student to the source: the librarian is acting as a search engine of the print reference collection. Even with the most instructive, intuitive Website in the world, I don't think we are yet able to do that in the online environment. That kind of 'escorting' and 'co-browsing' are, for me, the most exciting aspects of various digital reference initiatives. It allows the librarian to help the user be more efficient in choosing and using reference sources. But an online equivalent of 'roving' to ask users if they are finding what they need is not quite there, yet."

Linda Keiter and Margaret Landesman, University of Utah: "We continue to purchase both print and electronic

for most of our major reference sources, except for periodical indexes, where we have largely cancelled print. Originally, our rationale was that we needed print as back-up when electronic was down. But two things have happened. First, electronic is a great deal more reliable than it used to be. Most electronic reference products have very little down time these days. Second, perhaps more importantly, we've found that users refuse to use print when electronic is down. Even when the print is 20 feet away. Even when it is at the reference desk at which they are enquiring. They use another source or come back when the electronic is up.

"So why do we still keep so much print? Our suspicion is that it may have to do with the age of the librarians in charge of selection. Most of our reference collections are currently in the charge of librarians who are more or less our age. We do have a couple of librarians who routinely order electronic books, who actively seek them out. They are younger.

"Not that librarians our age aren't actively involved with and enthusiastic about the online products. We are. Perhaps it's that we tend to think in terms of print first and electronic as an add-on. But we believe that as the next generation of faculty and librarians move into leadership positions, they will think in terms of electronic first, print second.

"If it's a new product, offered in both print and electronic, we are much less likely to buy the print. It's somehow hard for us to give up print that we are used to having. But it doesn't seem to be nearly so difficult to forego the print in a title new to the collection.

"You asked if the use of print reference sources has diminished. Yes. There are fewer people using our print collections and our reshelving counts are falling. We have about the same number of bodies in the library, but a third of them now hang out in the Multimedia Center which has lots of computers, terminals for checking emails, application software, etc.

"Fewer bodies make it to the Reference Desk. And when they do, they go to the computer stations. But it's not clear to us whether use is down due to the availability of a specific product online — or because users are working remotely and they will take what they can get — they're not going to walk to the library because of the availability of reference books. Using the **OED** as an example, we used to have bunches of students, clearly taking a class together, coming in to use the **OED**. We haven't seen that now that the electronic version is available. In February of 2002, despite the fact that we were in the middle of hosting the **Winter Olympics** — a time when there were no classes and everybody's mind was elsewhere — the **OED** got almost 1,500 hits. This represents a tripling of the number of hits since the first month it was available — a year and half ear-

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lier. Now we routinely have 3,000 to 4,000 hits a month. This isn't just a decrease in the number of the print users. It's an overall great increase in usage of the **OED**. **The Thomas Register** is an interesting example. It used to be one of our most heavily used print sources. Today, we still have the print and it is in pristine condition - always a bad sign as far as use is concerned. **The Thomas Register** is available free online and we think our users have found it.

"Which version do librarians prefer? There isn't a clear answer to that. But we think that it may relate a good deal to habit. If you're used to the print and it's at fingertip reach, then you stay with the print, even when the online is also on your desk. Librarians, and maybe other people too, seem to prefer using what they already know and are comfortable with. It's faster. If a librarian has been using a print source for years, they're quite likely to continue using it.

"Students want the quickest way. And usually the quickest way is electronically. Faculty may well be familiar with and initially prefer the paper, but when they discover that the electronic version is available from home or office, their interest in the electronic resource tends to rise."

3. What are your thoughts on the future of this type of electronic reference publishing? For example, please consider: Has the convenience and increased access to electronic reference resources overcome problems with display and their organizational clarity? Will print reference tools disappear? If so, how soon? Will the increased amount of "free" information on the Internet make it harder for publishers to sell reference tools to libraries? Many larger publishers have formed alliances and contracted with various library consortia; will smaller publishers need to do the same or will they still be able to successfully reach libraries directly? How will these smaller publishers fare in this new electronic marketplace?

David A. Baldwin, The University of New Mexico: "I prefer the electronic versions because of their convenience and because I feel that the online versions have at least the potential of being regularly and frequently updated. I also like the fact that we do not have to physically handle those materials available only electronically, saving time, money, and space. I think that the convenience and increased access to electronic reference resources have finally overcome most problems with display and their organizational clarity. I do not think that print reference tools will disappear anytime soon — my guess is that it will take at least eight to ten years.

"Will the increased amount of 'free' in-

formation on the Internet make it harder for publishers to sell reference tools to libraries? If you mean free as in provided free to users by the library, yes. If you mean free, as in available from a website, web users could easily find reference sources compiled by teenagers or even pre-teens with a rabid interest in the Middle Ages, for example. Does that make them authoritative?

"Do I think publishers will have a hard time selling reference books to libraries? Librarians will continue to purchase reference books as long as they meet the needs of their users. Many larger publishers have formed alliances and contracted with various library consortia; will smaller publishers need to do the same or will they still be able to successfully reach libraries directly? Probably both. How will these smaller publishers fare in this new electronic marketplace? I think they can do well with good products."

Christina E. Carter, University of Alaska, Anchorage: "I do not believe that reference tools that have traditionally been available in print will have the same ubiquity and success in a web-based format that online counterparts to periodical indexes have. It comes down to the importance and necessity for the content, and journal and other periodical content tends to take priority for many of our patrons, at least in academic settings. (They can also often find answers to their reference and research needs in the periodical and newspaper literature.)

"The exceptions may be in the more specialized reference sets such as **Standard and Poor's Net Advantage** (an online collection of their various business reference titles), where the content and search capabilities are simply not available freely or conveniently on the Web.

"Many publishers have obviously seen the need to work with consortia to survive in the tight online environment — an attractive alternative (and often the only one) for libraries that do wish access to important reference titles online.

"An interesting alternative for reference publishers may be to market their online reference titles more in the format of e-books, where print reference titles are available for browsing and searching online (such as in **netLibrary** or **Baker & Taylor's** new **eContent Distribution** unit).

"Use of proprietary online reference titles and packages is threatened by the availability of so much free 'reference' content on the Web (at least for the present). Patrons are increasingly able to find reliable answers to their reference questions through sophisticated search engines such as **Google**."

Mari Katherine Hodges, Drexel University: "The future of electronic reference publishing: I certainly see that scientific publishing will continue to have increased value for both library professionals and the scientific user. Also I think that the electronic material

is increasingly well organized and that the format is more and more useful. Dictionaries, encyclopedias, and handbooks may cease to exist in print, particularly on library shelves, mainly because they are so useful and so up to date in the electronic version. (Personally I keep the print version of the *Oxford American Desk Dictionary and Thesaurus* on my desk.)

"How soon will the print equivalent disappear: I hesitate to say that the print will disappear but it is entirely possible. My only reason for hesitation is that the electronic versions are not always user friendly and there are constituencies that simply cannot afford the infrastructure to support electronic access. This said I would expect that some material would cease to exist in print within the next five years. The *Oxford Reference* materials are an example of what I would expect to see cease print publication.

"Will the increased amount of 'free' information on the Internet make it harder for publishers to sell reference tools to libraries? 'Free' does not always make the material good quality or accurate, although try to convince most undergraduates that the Internet is not the perfect solution to their research needs. The market for electronic publishing will continue to exist, but I expect there to be a major restructuring of the market players.

"Many larger publishers have formed alliances and contracted with various library consortia; will smaller publishers need to do the same? Absolutely, I think this will become a standard."

Beth Juhl, University of Arkansas: "At the **ALA** annual conference this year, there were several 'Future of Reference' sessions at which **Joe Janes** and others proclaimed ready reference 'dead.' I guess my own prognosis is not quite so dire, but I do believe that the free information that **Google** can instantly retrieve has come to replace the beloved *World Almanac* for most users. So perhaps the wide-open-web is sufficient for many quick factual questions.

"I have very ambivalent feelings about the 'category killers' or 'research centers' in which large publishing groups have brought together many different kinds of reference sources—biographies, encyclopedias, chronologies, even a few periodical articles—under one subject umbrella. Perhaps that is what students want. Too often, however, their assignments ask them to use specific types of resources; I have seen many students get very frustrated with the 'one big database' model because they don't have the bibliographic skills to decipher what they are looking at: is it a book, an encyclopedia, a magazine article, etc. It just looks to them like one big web site. From the librarians' point of view, in many cases the library has already purchased those sources in print; to buy them back again year after year is painful to the pocketbook. I would like to be able to cherry-

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pick the best titles, or the ones we need most, out of the collections.

"At the other end of the publishing spectrum are the niche and local presses. So much of reference work can be local in nature: state fauna, or regional biography and history, or a local newspaper index. Often the smaller societies and regional presses—and library vertical files or card indexes—are the only sources for this information. Many successful library and association projects are making this unique reference content available freely on the web, for example, the Handbook of Texas Online (**University of Texas Libraries and Texas State Historical Association**). If the smaller commercial publishers can find a successful model to charge for their content, I think they may have a very bright future. That is, if we don't spend all our budgets chasing after the 'big deal' first.

"The most disturbing aspect of the transition to an online reference collection is the change from one-time monograph purchases to ongoing serial expenses. We have all lamented this at length, but I fear the long-term effect may be a loss of depth and variety in the reference collection. In the past, we could purchase alternate editions of years of biographical sources from several different publishers. But if we subscribe to one big biography database, that is an annual commitment to one set of sources from one publisher. In the past, I don't think we would have been content to purchase just one book on, for example, world artists. Variety in the collection meant more opportunities to answer a wider variety of questions. I worry that ongoing commitments to big-ticket databases may take the spice and surprise out of our reference collections."

Linda Keiter and Margaret Landesman, University of Utah: "Electronic sources have largely overcome earlier problems with unreliability and general clunkiness. Most electronic reference sources now are pretty user friendly. We wondered about what print reference books are most likely to survive in print, which ones might still compete in print ten or fifteen years from now. We're sure that there are going to be lots and lots of books. Books just don't seem to us an endangered species. But, when we tried to think of a reference book we felt certain would be in demand in print in fifteen years, we had some trouble. Foreign language dictionaries seem a good candidate. Maybe some handbooks and things like that as well as books like the **MLA** or **APA** style books, **Moody's**, and financial ratios which people like to handle in print. But even with these, we can think of counter arguments as to why they might be more in demand and useful electronically.

"Will the availability of free sources make

it harder for publishers to sell reference tools to libraries? Yes, it will make it harder. We think we would not buy stock in a company that admitted publicly that print reference tools were expected to be its major product in five years.

"Smaller publishers will still be able to reach libraries, but they may need to find new ways to do so. Smaller publishers who can identify niche markets and target inexpensive products towards them perhaps can do very well - both in print and electronically. Maybe they should put their books on **Ebrary**. Maybe they should sell directly to consumers. Small publishers can tap into and pull together a scattered global audience. The Internet makes it easier to do this because your audience will use Google to find you.

"Consortia have been a big part of the early adapter market for electronic reference, but we wonder if consortia may be a less attractive market in the next few years, as funding is much tighter. We are finding in Utah that the products that appeal to us as a consortia have to appeal to a majority of the libraries. Many specialized titles don't, and perhaps are more likely to be purchased by individual libraries."

4. Has your library increased its purchasing of electronic reference materials in the last two or three years? Has the growth of electronic reference materials reached a level where they take more of the reference budget than paper materials do? Approximately what percentage of your reference budget is going toward electronic resources? Can your library still afford to purchase both versions? Can most libraries afford this?

David A. Baldwin, The University of New Mexico: "Our library has increased its purchasing of electronic reference materials in the last few years. The growth of electronic reference materials, as distinct from e-journals, is not yet taking more of the reference budget than we are spending on paper materials. But without a doubt the amount we spend on e-reference is increasing. We have not identified the exact amounts of our reference budgets that are going toward electronic resources; however, approximately 30 percent of our total materials budget goes toward electronic materials. Like most libraries we are facing at best a stable budget and any duplication has to be looked at very carefully. We do occasionally purchase material in both formats, but there have to be strong reasons for it. We suspect that such duplication will become increasingly rare, not only for us but for almost all libraries."

Christina E. Carter, University of Alaska, Anchorage: "The Consortium Library's reference budget has gone primarily to print reference titles; any online reference titles (such as the **OED**) have come from general acquisitions funds. Like many libraries, a larger and larger percentage of our acquisitions budget (and other funding) is go-

ing toward access to online periodical aggregators and other e-serials. The bulk of electronic resources that come from our acquisitions budget are full-text periodical databases and indexes. The Consortium Library has only purchased a handful of individual e-reference titles; we have been able to access other online reference packages, as mentioned above, only via participation in statewide and academic consortia."

Mari Katherine Hodges, Drexel University: "Has your library increased its purchasing of electronic reference materials in the last two or three years? Definitely. As I mentioned earlier the current mandate (from the Library Dean) is to purchase only electronic when available.

"Has the growth of electronic reference materials reached a level where they take more of the reference budget than paper materials do? Yes—in fact this year we decided to reallocate some of the book budget for the purchase of electronic books.

"Approximately what percentage of your reference budget is going toward electronic resources? Approximately 30%, counting electronic journals and databases.

"Can your library still afford to purchase both versions? In general we don't purchase both versions or maybe I should say we only purchase both versions when there is a specific need or there is elaborate justification made for the purchase of both versions. This is not meant to imply that we have a totally electronic library; there are instances where we have made a decision to continue acquiring the print.

"Can most libraries afford to purchase both versions? Larger academic institutions might be able to afford to purchase both versions; the question would be: will they want to? Most collection development policies are quite specific in terms of duplication of resources, and I'm sure many institutions would rather spend the money on other resources rather than duplicate print and electronic. What about smaller and/or non-academic libraries? My concern would be for the smaller institutions and those with very limited consortia buying power. Also I do wonder about the public library situation. The **Philadelphia Free Library** is a reasonably well-funded organization and the Central Branch reflects this, but many of the Branch Libraries are located in very poor areas of Philadelphia and have only minimal size collections and a very limited number of computers. Given this situation they have more use for the print resources than the electronic and often only purchase the print."

Beth Juhl, University of Arkansas: "Yes, we have definitely increased our electronic collection and no, we can't sustain both formats indefinitely. I fear that I can't really answer the question about percentage of budget completely because we are in the midst

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of developing a new budget model for our collections. In the past, the reference budget included many subject resources: indexes and abstracts, specialized dictionaries; statistical sources. We are trying to move those subject resources out of the reference budget and into their appropriate subject area, to get a better handle on how well we are supporting those disciplines. Certainly, if one looked at indexing and abstracting sources, I would estimate more than 85% are now online only. More general reference sources online would be a much smaller percentage of the budget."

Linda Keiter and Margaret Landesman, University of Utah: "We are now spending substantially more on electronic than on print reference sources. Because the electronic materials are funded on different accounts and reported in different categories, we don't have very accurate comparisons with print expenditures. But we would note that our library is paying more for just **FirstSearch** and **Academic Universe** than we are spending for print reference titles.

"Can we afford to purchase both? This isn't a new dilemma. Research libraries have always resisted buying the same information in more than one format. And we've always done it too. The old maxim of never buy more than one copy or more than one format maximized the number of titles available to users. If it's really expensive to buy both, we would push ourselves to make some kind of decision. But if the price is affordable, and we believe that we have users who want the print and also users who want the electronic, then we probably would buy both. What we can't afford to do is to buy everything we bought in print both in print and electronically. What we can't afford to do is to buy things people don't use."

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in Korea — sign up. Today there are thousands of users in more than 50 countries, across a diverse range of markets." Remember the article — "The Development of the First PDA Library Portal for Academic Libraries" (see *ATG*, June, 2002 p. 65) by **Michael Binder** (Dean of Libraries, **Western Kentucky University**) discussed **AvantGo** software. Apparently the same free software is used with **MobileEditions**. <http://www.wiley.com/>.

And speaking of articles in *Against the Grain*, did you read the one by **Niko Pfund** — "Technology and Change in the Library Marketplace," November 2001 (v.13#5, pp.22, 24). Anyway, **Niko** has another very incisive article in the June 18, 2002, *Chronicle of Higher Education*, "University Presses Aren't Endangered..." **Peter Givler** from the **American Association of University Presses** will speak in **Charleston** (thanks to **Lyman Newlin**)

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Aggregation, Integration and the Library Without Walls?

by **Adam Hodgkin** (xrefer) www.xreferplus.com

Content aggregators are playing an increasingly prominent role in delivering electronic subscription resources to libraries. It is timely to consider some of the advantages that can be conferred by aggregation but also some of the potential limits in the aggregator role.

The typical aggregation service will collect together in one on-line electronic resource copyrights licensed from a variety of publishers or authors. But aggregators do more than collect content from a variety of sources; these resources will be delivered to end-users through a common interface, they will usually be supported by a single search service and they will be part of a single delivery mechanism. There is a surprising degree of variety in the commercial terms offered in different areas, but increasingly aggregators are moving towards forms of subscription publishing. I work for **xrefer** which is an aggregator of "reference resources" so I will tend to draw examples from this field; but aggregators are operating in a number of different areas of the market: news stories, financial data, eBooks, eJournals etc. There are plenty of areas in which content from disparate sources needs to be aggregated if it is to be well used on the Web.

From the librarians' or the end users' point of view, I would suggest that there are three main advantages in having an aggregator deliver content resources into the library:

- All the resources are presented through a common user interface and style of presentation (this might be as simple as putting all the documents into **Adobe Acrobat** format).
- The resources share a common location (which for the end user means finding a large variety of similar resources within one service).
- The resources are offered through a common license, subscription package and support function.

The first point is hugely important and is directly driven by the importance of Web standards. Any successful Web aggregation service has to be true to the proven success of established Web services (**Yahoo**, **Google** etc). This provides a very important benefit for Web users. Think back to CD-ROM and the first generation of "pre-web" online services. The first and second generation of electronic publishing (on-line from a proprietary dialup system and CD-ROM) gave the information providers latitude to invent their own interface for each electronic publication. This predictably led to a confusion of incompat-

ible systems, interfaces, commands and functions. Whatever the merits or demerits of any particular solution or interface, the end-user was in the awkward position of having to learn and "forget" scores of different and incompatible approaches. The enormous pressure of Web standards has helped to stop rival software producers from re-inventing the wheel with each new publication. The Web has encouraged aggregators and it has encouraged them to keep it simple and to limit innovation.

There is however an important role for aggregators who can find ways of adding value without adding needless complication. For example: the Web services which five years ago began to aggregate financial information services soon realised that there was great added value for users in providing automatic and customisable graphing features. At **xrefer** we saw that a consistent model for aggregating reference works would allow us to create an additional type of metadata, xreferences, which provides linkage between reference works created by different compilers. A user who consults **xrefer's** services (e.g., **xreferplus**) is able to browse between the different titles using additional meta-references which are generated by **xrefer's** software and database system. For the user this means that browsing a collection of reference works can be an experience in which intimate connections between entries in different books are revealed.

The very scale and global nature of the Web has encouraged aggregators to focus their efforts within specific domains and to aggregate content sources which might otherwise be thought of as competitive. Thus one sees on the Web a tendency for content of a similar type to cluster within a service rather than being distributed between services. One might call this the "Chinatown" phenomenon. Just as Chinese restaurants frequently cluster within the same street, so content aggregators tend to offer groupings of content, which are both competing and complementary (one aggregator concentrates on newspapers, another on scientific journals, and a third on reference material). I suspect that the reason for this is just the same as the reason that Chinese restaurants tend to cluster together. It is easier for the market to find a good meal if there are several restaurants in close proximity. It is easier for the user to find appropriate content if the competing resources can be expected to be in the same general "location." This is of course a point in which aggregators tend to think very dif-

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