

SELECTION CRITERIA FOR TRADITIONAL AND ELECTRONIC RESOURCES

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SELECTION CRITERIA FOR TRADITIONAL AND ELECTRONIC RESOURCES

All I know of the world beyond the narrow range of my own personal experience is what others have told me. It is all hearsay. But I do not count all hearsay as equally reliable. Some people know what they are talking about, others do not. Those who do are my cognitive authorities. (Wilson, Patrick. *Second-Hand Knowledge: An Inquiry into Cognitive Authority*. Westport, CT: Greenwood Press, 1983, 13)

Selection Criteria Task Force Charge

The Task Force (TF) was charged with “compiling/reviewing/disseminating selection criteria for electronic resources to supplement traditional selection criteria (e.g., authorship, content, provenance, accuracy, relevance to institutional mission, and subject matter) used by libraries, archives and museums. Supplemental criteria include: design, use, timeliness, permanence, quality of links to other sites, value-added utility beyond print version, originating domain, downloading capability, uniqueness, reverse links, etc.” The process we followed was to:

1. appoint TF members who have expertise with different types of materials,
2. undertake an 'environmental scan' of existing selection criteria for traditional resources, and
3. undertake an 'environmental scan' of existing selection criteria for e-resources.

As a follow-up to the Bicentennial Conference on Bibliographic Control in the New Millennium (<http://www.loc.gov/catdir/bibcontrol/conference.html>), it is anticipated that the dissemination of this draft within the TF, to the Cataloging Directorate, and to other TFs, will generate additional issues for consideration and suggestions for other documents (physical or digital) to examine. The TF welcomes all comments.

Throughout this document the term ‘traditional resources’ is defined as a physical resources made available through tangible means, and ‘e-resources’ is defined “as any work encoded and made available for access through the use of a computer”-based device (Library of Congress, *Collections Policy Statements: Electronic Resources*, 1999). To be more specific, “online will refer to intangible works, (and) physical to a tangible work” (ibid.). To some degree, the distinction being drawn between ‘traditional’ and ‘electronic’ materials is both arbitrary and somewhat dated (just as one person’s cultural heritage object is another person’s freely-accessible

website.) For example, though geospatial data are often digital, maps can be print and/or electronic. This distinction is presented, however, as it is consistent with current librarianship and perhaps, as a consequence, with the conceptual division which remains in many informational settings. The term 'library' is also used, but is understood to include archives and museums of both a traditional and non-traditional nature.

TF Composition

Our organizational composition includes numerous areas of expertise: licensed electronic products and freely accessible websites; government information; cultural heritage (physical objects and images); earth science and educational geospatial data; and, learning objects. An additional dimension includes an evaluation of both freely accessible and fee-based e-resources. This was a deliberate effort, as each type has both similar and separate selection criteria. Therefore, an explicit structure, and a consequent goal, has been to enumerate as many types as possible. Member affiliations and expertise follow.

Member name	Affiliation(s)	Expertise	Addresses
Dr. Angel D. Batiste	LC representative	International Documents (national governments and international organizations)	abat@loc.gov
Carolyn Larson	LC representative & LC Universal Holdings liaison	Licensed products and freely accessible websites	clar@loc.gov
Pat Ann Loghry	Notre Dame & CMDS liaison	Licensed products	Patricia.A.Loghry.1@nd.edu
Gene Major	NASA, Global Change Master Directory	Earth science and educational geospatial data	major@gcmd.nasa.gov
Karen G. Schneider	LII (Librarian's Index to the Internet)	Freely accessible websites	kgs@lii.org
Dr. Mary Woodley	California State University, Northridge	Cultural heritage (physical objects and images)	mary.woodley@csun.edu
Susan Rae Morris	LC Liaison to TF	(blank)	smor@loc.gov
Amy Tracy Wells	MSU, MATRIX & RUSA liaison	Learning objects and freely accessible websites	wellsat@msu.edu

While discussing selection criteria for the broad universe of materials is not possible, many of the criterion enumerated will be applicable to other types of known and emergent objects.

Background

What is the utility of selection criteria? To a librarian, this issue is fundamental to the efficient allocation of energy, monetary resources, and patron assistance. However, in the age of Google, where information retrieval against in excess of three billion pages can yield almost instantaneous precision (or at least recall) regardless of authority, the relevancy of selection criteria is called into question (January 10, 2003, from <http://www.google.com/press/highlights.html>). For example:

(There) is a growing consumer orientation to information...As a result, the process of selection, evaluation, and interpretation that develop information into knowledge and understanding are atrophying for many readers (or not being developed in the first place). We see this trend epitomized in the Web, and discussions around the Web, which as Marshall (1996) points out conflate 'information' with 'knowledge.'...Once accessed, it is for the reader, in most cases, to judge what it means, or if indeed it means much of anything at all. Unfortunately, this second-order reflection is discouraged by the leveling effect that puts all information points at the same level of accessibility and the designer/authors at the same prima facie level of credibility. (Nicholas Burbules, "Rhetorics of the Web: Hyperreading and Critical Literacy" in *Page and Screen: Taking Literacy into the Electronic Era* [New South Wales: Allen and Unwin, 1997], <http://faculty.ed.uiuc.edu/burbules/ncb/papers/rhetorics.html>)

However, recall and precision are separate from issues of selection criteria. In a recent survey, Marcum and George (2003) note that "high proportions of students and faculty" agreed that "information provided by (their institution's library) remains more highly regarded than information found on the Internet." Specifically, the library:

- contains information from credible and known sources (98.2%)
- provides high quality information (97.9%)
- provides information that I use and trust without additional verification (89.0%).'

In a hypermedia environment defined as any networked media, the complexities of selection criteria become more complex, not ignorable (Bieber 2000)

Traditional Selection Criteria

Environmental Scan -- Print

The environmental scan of traditional print selection criteria included examining:

1. Bopp, R.E. and L.C. Smith. *Reference and Information Services: An Introduction*. 3rd edition. Englewood, CO: Libraries Unlimited, 2001
2. Katz, W. *Introduction to Reference Work Volume I: Basic Information Sources*. 8th ed. New York: McGraw-Hill, 2002a.
3. Katz, W. *Introduction to Reference Work Volume II: Reference Services and Reference Processes*. 8th ed. New York: McGraw-Hill, 2002b.
4. Wood, R. and F. Hoffman. *Library Collection Development Policies: A Reference and Writers' Handbook*. Lanham, MD: Scarecrow Press, 1996.

(Detailed tables for Bopp & Smith, Katz, and Wood & Hoffman follow in Appendices A, B, and C respectively.)

This approach is utilized because "although evaluation criteria were originally developed for print sources, they are also applicable to non-print sources, such as microforms and databases" (Bopp and Smith 2001, 312). Or as Katz (2002) states,

Whether in print or an electronic database, there are basic evaluative points concerning the all-important content.... Aside from the content the librarian must ask at least four basic questions about a reference work: What is its purpose? It's authority? Its scope? Its proposed audience? Finally, the format must be considered for print and the navigational tools for electronic databases. (25-26)

However, Bopp and Smith (2001, 312), also note that one-to-one comparisons are not necessarily appropriate as "it may be more difficult to apply some of the criteria to electronic and nonprint sources, however, because such media cannot be examined directly in the same way that one handles print sources." Soo Young Rieh (2001, 159) suggests that "people's relevance criteria and decision rules accumulated in the traditional information systems may not be directly applicable to the Web." It seems logical, then, that electronic and nonprint sources can be assumed to have selection criteria which are not applicable to print sources. However, as both formats are in production and use and have sufficient overlapping characteristics, both are examined.

Points of Convergence

An analysis of convergence is appropriate to illustrate commonalities among traditional resources regardless of material type. This analysis must consider the variety of resources: reference works; dictionaries (thesauri, and quotation books); almanacs, yearbooks and handbooks; biographical sources; encyclopedias; geographical sources (maps, atlases, gazetteers, and travel guides); bibliographical sources; serials (periodicals and newspapers); indexes and abstracts (periodicals, table of contents, subject, citation, and reviews); government documents and statistics sources; imagery; and scientific data. These points of convergence are summarized by Katz (2002, 24-28) as:

1. Purpose -- Is the purpose evident and has it been fulfilled?
2. Authority -- "What are the author's (or compiler's) qualifications for the fulfillment of his or her problem? What is the imprint of the publisher?"
How objective is the work?
3. Scope -- "Will this (item) be a real addition to our collection, and if so, what exactly will it add?" For example, unique contributions and currency
4. Audience -- Use of comprehensible language and content to address intended audience
5. Cost
6. Format -- "Arrangement is of major importance... (or ease of) search..."
What is the clarity of structure, font, symbols, graphics/illustrations, and abbreviations?

Analysis

The points of convergence outlined above are often problematic in their universal application. The difficult semantic mapping of terms such as 'purpose' and 'authority' (see also "Link" section) and merit discussion and analysis; an example of this difficulty is seen in the attempt to understand authority based on the current sources. As Wilson (1983) notes, there are three different types of authority, "cognitive (influence on thoughts), administrative (influence on action), and institutional (influence from institutional affiliation)" (cited in Fritch and Cromwell 2001, 499). Authority can originate from different sources including author, publisher, reviewer, sources consulted, receipt of awards, etc.* The term also seems

* For further discussion, see this document's "Analysis," page

to contain additional concepts. For example, Katz incorporates both objectivity and fairness (1992, 25) while Wood and Hoffman (1996, 38) in paraphrasing Broadus (1981, 90 and 91) explicitly include authoritativeness with truthfulness meaning both veracity and accuracy. What seems clear is that a one-to-one mapping of terms is not always possible between authors.

As fundamental as these points are to the criteria enumerated here and in the Appendices, it is important to be explicit in noting exceptions. For example, implied in the concept of authority and often times scope is the idea of a bias-free work. It might be argued that bias exists in any given work. This bias can simply be an author's or editor's perspective or a work's scope. Further, authority can have various meanings; at times cognitive authority, defined as "influence on actions," can be at odds with 'institutional authority', defined as "influence derived from institutional affiliation" (Fritch and Cromwell 2001, 499). For example, during the Iraq War, anonymous blogs reportedly written from inside Baghdad were popularly understood to be authoritative precisely because the writers *lacked* institutional affiliation (Maggie Shields, "A Different Perspective." *BBC Newshour*, April 7, 2003). Additionally, currency or *lack thereof* can also be a criterion based on this exception. Using a 21st century map of London to understand Dickens might be less useful than an 1838 map for 'following' *Oliver Twist*.

These points of convergence shape the selection criteria of print sources. It is simply necessary to understand that each still bears examination in the *context* of any given work.

Electronic Selection Criteria

Environmental Scan – Electronic Materials

The environmental scan of electronic selection criteria included examining:

1. Digital Library for Earth System Education (DLESE) Metadata.
http://www.dlese.org/documents/policy/CollectionsScope_final.html
(accessed June 13, 2003).
2. Jewell, Timothy. "Selection and Presentation of Commercially Available Electronic Resources: Issues and Practices". Washington, D.C.: Digital Library Federation and Council on Library and Information Resources, 2001,.

- <http://www.clir.org/pubs/reports/pub99/contents.html> (accessed June 13, 2003).
3. Jones, Wayne, eds. "Acquisition and Collection Development" In *E-Serials: Publishers, Libraries, Users, and Standards*. 2nd ed. New York: Haworth Information Press, 2003.
 4. Kastens, Kim A. and John C. Butler. "How to Identify the 'Best' Resources for the Reviewed Collection of the Digital Library for Earth System Education." *Computers and the Geosciences* 27 (2001): 375-378, <http://www.ldeo.columbia.edu/DLESE/collections/CGms.html> (accessed June 13, 2003).
 5. Pitschmann, Louis A. "Building Sustainable Collections of Free Third-Party Web Resources." Washington, D.C.: Digital Library Federation and Council on Library and Information Resources, 2001. <http://www.clir.org/pubs/abstract/pub98abst.html> (accessed June 13, 2003).
- (Detailed tables for Jones, Jewell, Pitschmann, and for earth science and educational geospatial data follow in Appendices E, F, G, & H respectively.)

This approach emphasizes those materials that include:

1. traditional content, which through their manifestation present new and evolving issues such as e-serials, directories, dictionaries, abstracts, services providing indexes and tables of contents, encyclopedias and almanacs, bibliographies and bibliographic databases, full-text collections--Demas, McDonald, and Lawrence (1995) and Kovacs (2000a; 2000b) cited in Jewell (2001)-- and learning objects
2. discrete and/or related electronic resources (of any or multiple types) such as <http://www.whitehouse.gov/history/presidents/bc42.html> or <http://www.whitehouse.gov/>, or
3. new types of material such as electronic collections, galleries, learning management systems, etc., for example 'ur-works' or superworks which may contain any number of somehow related works (Svenonius 2000, 38), and
4. geospatial data such as maps (topographic, geological, weather/atmosphere), imagery (aircraft, satellite), unprocessed satellite data, scientific data (formats vary), atlases, databases, digital models and digital geospatial images (Digital Elevation Models (DEMs), Digital Terrain Models (DTMs), Digital Line Graphs (DLGs), Digital Orthophoto Quadrangles (DOQs), and

Digital Raster Graphics (DRGs)) (U.S. Geological Survey National Mapping Standards <http://mapping.usgs.gov/standards/>).

These materials may or may not be free and freely accessible.

Points of Convergence

Detailed tables for Jones, Jewell, Pitschmann, and for earth science and educational geospatial data follow in Appendices E, F, G, & H respectively. Analyzing convergence between criteria for e-resources is complex as criteria for electronic media are more varied than those for traditional resources. For example, one criteria checklist may define staff training as significant , while another may not mention it explicitly. Whether this is because it is so integral to resource selection or simply is not important negotiable is not clear. This difference may be due in part to electronic media's relative lack of maturity and may also be due to a more fundamental difference between fee-based and freely-accessible electronic resources. That is, the latter may be judged using different criteria; freely accessible resources may be evaluated more favorably by some given their (seemingly) low-cost. (For a discussion of their truer costs also see Pitschmann, 2001.)

Many of the concerns noted by Bosch, Promis, and Sugnet in 1994 are still applicable today, including:

- ...licensing constraints and limitations on the use of the data imposed by vendors, publishers, or producers...
- ...coverage of underrepresented or high-priority subject areas...
- ...reputation of the publisher and producer, comprehensiveness and scope of the data's coverage and data and indexing accuracy...
- ... durability of the medium...
- ...potential degradation of electronic data...
- ...user-friendly features such as online tutorials...
- ...user documentation should be accurate, easy to use, comprehensive and cost-effective...
- ...effectiveness of data retrieval software(search)...
- ...product evaluation, such as reviews, user studies, product demos should be consulted...
- ...availability of printing (remote or connected directly to each work station)...
- ...technical support and maintenance of the product...
- ...evaluation of software (menu-driven vs. command-driven feature, override capability in the program's command structure, short initial learning curve, security (tampering and viruses), compatibility with existing hardware and software medium...
- ... hardware concerns include reliability, maintenance, compatibility with peripherals, flexibility

for other uses or networking, security from theft and tampering, compatibility with existing systems in the library and with the systems used by the parent organization's community...environmental and spatial requirements for equipment and workstations...purchase or lease options...costs for future updates or upgrades...additional start-up and maintenance cost such as site preparation and hardware shipping and installation...shelf life of the product's storage medium and replacement costs... demonstrated need for specific information products in electronic format...(identification of which) patron groups that will benefit most...ease of use and depth of information levels appropriate for the intended user group...comparison of the product under consideration with the scope and cost of other resources... (9-12)

As robust as this list is, the issues presented by Bosch, Promis, and Sugnet do not offer a complete overview. To further illustrate the complexity of e-resource, selection criteria must also consider:

1. distracting visual elements; how stable is the interface and functionality; does it meet ADA standards;
2. what types of materials or subject areas are intentionally included/excluded; what kind and how much information is offered about the works; is the content stable, or are titles added and dropped and with what warning; do updates appear in advance, simultaneously or later than the print; what are the search options and what do they cover, including text, images, table of contents, etc.; inclusion in indices; contribution to the collection;
3. inclusion of easy-to-use alert systems; ability to be integrated into the current technical infrastructure; what are the document delivery options;
4. availability in multiple formats;
5. inclusion of "freely accessible" vs. "paid" resources; is there an explicit policy (and commitment to) archival arrangement or perpetual access under defined conditions and, if so, how will the media be updated; if external links are included, are they maintained; is this a candidate for consortia/co-operative collecting agreement;

6. is the resource using available standards; what are the standards;
7. what kind of customer support is available (including cost and availability) for this resource; availability of local expertise to handle support;
8. what is missing, i.e. is there a retrospective file; is there a "rolling wall" or a "forward creep" (does the entire year's articles drop out of the database in January each year or does the content drop month by month as new material is added); are the back files included in the price or are they separate, if separate, are they from the same publisher, and are they both included on the license agreement;
9. can and how does it integrate with other systems including course management systems; how will the resource be added (and possibly advertised) to the collection via the catalog, another database or static webpage; and ultimately, is it acceptable to the user community.

While the issue of how to rank various criteria and input are beyond the scope of this work, the process of identifying and defining the relevant issues is a necessary first step.

Cultural Heritage Materials and Learning Objects

There are two additional types of resources that require discussion. 'Cultural heritage' and 'learning objects' are not specifically addressed in the previous section, but they comprise an increasing percentage of digital content.

'Cultural heritage,' taken in its broadest meaning, includes traditional library materials (printed books and periodicals) as well as "natural, archaeological and ethnographic monuments and sites and historical monuments and sites of a 'museum' nature that acquire, conserve and communicate material evidence of people and their environment" (ICOM 2001). However, cultural content can also be defined as "digital resources that help to capture our cultural memory and preserve the human record for future generations...(and) includes digital multimedia surrogates for cultural artifacts of the kind typically held in the collection of the world's museums, libraries and archives" (Gill and Miller 2002). A detailed table, developed by Mary Woodley, follows as Appendix D.

As with other types of resources, the selection process for cultural heritage resources must consider the community or stakeholder concerns first. Unlike other types of materials, certain cultural artifacts belonging to a specific ethnic/cultural group may not be appropriate to retain in a collection, or if in the collection, may not be appropriate to display, exhibit, or reproduce in any format (Vogt-O'Conner 2000, 35-63). That is, those responsible for developing collections cannot assume that cultural heritage materials should even be collected and preserved. In practice, many collections are composed of original "gifts/donations" given to the library at its inception, which are then added to over time. Finally, as with many other types of resources, future research paradigms, as well as shifts in cultural values, may alter what information or resources have primary value (Cullen 2001, 86).

Though educational or instructional media is by no means a new type of object, it is a type of resource that has been transformed in the electronic environment and is highlighted for that reason. Traditionally, media have included textbooks, educational kits and games, videos, curriculum guides, posters, etc., or as ERIC educational media states, are media "equipment and materials used for communication in instruction" which includes both physical as well as digital resources (ERIC Processing and Reference Facility, <http://www.ericfacility.net/extra/pub/thesfull.cfm?TERM=Educational%20Media>) . In an electronic realm, different communities have different definitions for (what will be referenced as) "learning objects." For example, the IEEE Learning Technology Standards Committee states, "Learning Objects are defined...as any entity, digital or non-digital, which can be used, re-used or referenced during technology supported learning" (See Polsani, Pithamber R. "Use and Abuse of Reusable Learning Objects," *Journal of Digital Information* 3, 4 (2003-02-19). <http://jodi.ecs.soton.ac.uk/Articles/v03/i04/Polsani/> 2003-10-02 for more.) As digital resources which may be fee-based or freely accessible, they bear many of the same characteristics as licensed and freely-accessible resources or may be conceived of as wholly new objects (see Trends.)

Analysis

Though many of the points of convergence outlined above merit discussion, four in particular present new challenges: linking, infrastructure; freely-accessible websites, and ownership vs. control issues.

Links

Like Wilson's concept of authority, the concept of a 'link' is semantically rich because it imparts different relationships which are both intellectual and technical (e.g. document subsections, citations, examples, definitions, translations, etc.) and is growing in meaning and functionality (Berners-Lee, Hendler, and Lassila 2001).

Returning to the idea of authority,

Links, once again, are part of what can turn information into knowledge, suggesting causal associations, category relations, instantiations, and so forth; but when a link is not evaluated as such, an opportunity to translate information into knowledge of some sort is lost. Hence we need an alternative analysis that highlights the cognitive importance and potential of links.'(Jones and Spiro, 1995, as quoted in Burbules, Nicholas C., 1997).

In other words, it is a method of divorcing technical relationships from intellectual references so that content has meaning.

Infrastructure

The equipment and facilities required for electronic resources are new and different. The supporting hardware, software, and telecommunication options are changing and unfamiliar. The cost implications of the infrastructure necessary to access electronic information go far beyond those of traditional materials. Total cost (which may include hardware, client and server-based software, site preparation, technical support, connect costs, maintenance, and more) and, consequently, the potential financial risk of a poor choice, is often notably higher for electronic resources. Costs involved in the acquisition of and access to electronic information present difficulties. Purchase and lease agreements with contractual clauses addressing litigations on access, ownership of discs and tapes, restrictions on downloading and duplicating support documentation, copyright restrictions, and liability from patron use of information are not typical with print resources. The importance of vendor support and reliability in the selection process is new. Preservation and archival responsibilities have different implications when the medium is electronic, including access both now and into the future as well as back file content (e.g. letters to the editor, ads, editorial notes, etc.) Additionally, library service implications take on new importance. For example, selecting traditional resources has not often required the selector to consider the skills the users needs, how they will be taught, and who will teach them. In short, the role of the selector has changed dramatically.

Cost Factors and Freely-Available Websites

Librarians sometimes refer to the “hidden” costs of providing access to freely-available websites, but these costs are not so much hidden as poorly understood, much as they tend to be for library technology issues in general (Schneider 1999). Despite misnomers such as “free websites,” everything that is acquired or is made accessible in a library has a cost factor of one sort or another. The phrase “freely-available websites” more correctly refers to the continuum of access, where at one end we can place highly proprietary content such as fee-based value-added databases, at the other end we find web content that is made globally available to all who have access to the World Wide web, and in the broad middle we find content that may be limited to certain groups, such as “all students at this university,” or limited by other reasons, such as nonstandard formats, technical limitations, or by natural or political conditions such as websites frequently disrupted by hurricanes or war.

The cost of selecting and providing access to freely-available websites is very similar to that of other materials, regardless of format. In some areas it is more costly, due to rapid technological change. But, to repeat a truism of library science, personnel costs associated with selecting and maintaining collections are by far the most significant and undervalued budget item associated with providing any library service, and in nearly all cases vastly exceed the actual costs of the items themselves, with academic journals a possible exception.

Pitschmann (2001) notes several staff specialties: selection, cataloging, technical, project management. To this we explicitly note the role of maintenance, which may be composed of staff from many different areas. Due in part to the control issues unique to electronic content discussed earlier in this report--because web resources are not “owned” or controlled by the library “collecting” them, and can change or disappear as the publisher or host determines--web collections have particularly demanding needs for collection maintenance, also known as deacquisition or weeding.

Careful and trained selection is important not simply because the library must meet the needs of its mission, but because judicious selection is the first major area of cost control in providing freely-available web resources. Librarians’ Index to the

Internet estimates that a record for a web resource will cost 4 labor hours throughout its life cycle, including selection, cataloging, organization, and maintenance, plus associated technical and administrative costs[†]—a statement that meets with the concurrence of managers for Michigan Electronic Library (MEL) and Internet Public Library (IPL)[‡]. Selection criteria must be established, staff trained, and then many hours applied to sifting through digital flotsam and buried treasure with primitive selection tools such as Google. Attempts to control these costs with technology are not fully satisfactory; as Pitschmann (2001) notes, harvesting tools can assist in selection, but are far too primitive to do more than supplement human review processes (and then incur their own overhead and maintenance costs).

Two last cost issues related to freely-available websites deserve brief attention. In addition to the inevitable technical and management costs—complicated by rapidly-changing standards and formats—there is also the “overhead of overhead,” or as Pitschmann (2001) calls it, the “wide-ranging issues for communication and workflow across organizational units.” (This may be less true in organizations dedicated solely to web content, of course.) Finally, a significant issue related to web resource acquisitions is that they cannot be simply ignored for a few months during a bad budget period. Electronic resources that are continuously available require continuous attention and maintenance, not only on general management principles but because, as explained earlier, these resources are particularly vulnerable to rapid deterioration. The decision to provide access to freely-available websites, either on a modest level (such as providing links to major directories and search engines) or on a robust level (such as developing a local web portal or extensive pathfinders) must be made with the full understanding that the cost factors are ongoing and are not likely to decrease over time—in fact, just as managers decide how many books they

[†] Statistical data indicate that in any quarter, for every three sites added to their database, one is removed (and this for a database where the selection criteria is biased toward sites with extensive “shelf life”). A full 10% of the total LII labor budget is dedicated to weeding, and more time spent developing weeding policy and practices, training dedicated weeder-librarians, and managing the overall weeding effort.

[‡] This was informally confirmed in a “table talk” session held by LII, MEL, and IPL managers at the 2002 conference of the Public Library Association. More formally, the FTE staffing requirements for LII records have remained constant as the database has grown, and are roughly equivalent to two hours per record in the creation stage and two hour in the post-indexing life cycle, inclusive of programming, training, administration, and other overhead.

should offer, they should also decide how many web resources they can offer well, and then develop a long-range budget to support this scenario.

Ownership and Control

A significant distinction between online and tangible media is the extent of control over ownership issues. A book may be permanently placed in a library's physical collection, and if the author dies or the publisher goes out of business, the book will continue to remain on the shelf until it is intentionally removed from the collection by the library staff of the owning library (momentarily disregarding the complicating factor introduced by theft of library materials.)

Ownership issues are very different for electronic resources. For both freely-available and proprietary, value-added resources, the user communities are provided access to these materials, and libraries can certainly claim stewardship in the sense of selecting, purchasing, making available, and managing and evaluating access to these resources; but libraries cannot truly claim ownership. To "add" a website to a web portal or a database to a library webpage is to catalog and announce its presence, and stops short of the actual acquisition of the item. The physical resources are in control of their selectors throughout their life cycle, not only in availability but in such key collection issues such as currency, accuracy, scope, accessibility, and so forth. The library may find its actual acquisition *practices* incongruent with its own acquisition and preservation *policies*.

This suggests that selection criteria must consider the continuum of ownership in light of their "time, place, (and) manner" responsibilities to provide content for their user communities. A library may decide to select material in multiple formats, such as print and database, in order to ensure content availability long past the license period for the database. Alternatively, a library may consider the ephemeral quality of some content a strong plus, such as online access stock quotes, which are updated on a 20 minute cycle, or light entertainment reading, which would normally require a revolving door of acquisition and de-acquisition activities. And accessibility issues --including not only the needs but the preferences of users--play a key role, as well. Users may prefer People Magazine in paper or need at home access to a quality online encyclopedia. However, a key issue is that libraries cannot choose long-term availability of online content; they can only factor in the limited access issues when developing policy and practice. This is very different from the print

world, where a library can choose to retain an item for a short period through its popularity cycle, permanently, or any other period that suits the needs of the library.

A broader issue here is the role of librarians and libraries in developing and advocating fair-use and preservation policies and specific technologies in the national and international legislative environment, which might seek to rationalize this dilemma.

Trends

Just as traditional resources have evolved and continue to evolve, the same is true of electronic media. As we move through from a “pure” print environment, some trends can be noted.

- Shift from conceiving of preservation and collection development as necessarily different areas of focus to preservation at the point of purchase.
- Shift from ownership to access and the development of licensing in conjunction with legal counsel to evaluate license agreements in light of particular institutional needs such as distance learners, use in cooperative reference services, interlibrary loan, electronic reserves, “fair use” rights, etc. (Pettijohn and Neville 2003).
- Shift from selection of individual titles to multiple content databases offered by aggregators, leading to new selection criteria focusing on the comparison of content, search and display features, etc. among packages offering similar content.
- Shift from selection of resources by individual subject specialists to the use of committees or teams representing various library departments including IT and consortia libraries to evaluate all recommended resources.
- Shift from conceiving of a collection as a wholly owned universe of physical objects to the on-going management of temporally limited electronic objects which may need to be constantly monitored for title duplication, additions, removals, changes in depth of coverage, etc.
- Shift from big package e-journal deals with *publisher*-defined content to package deals with *institution*-defined content.
- Growth of scholarly communication and learning objects in the form of e-print, post-print, institutional events, and ‘learning management systems’ managed by institutional repositories. (Lynch 2002a and 2002b)

- Faster changing hardware and/or software environments in order to assure successful content delivery and/or platform currency.
- Increased use of “preservation” monies being used to develop technical infrastructures, including servers and networks.
- Growth of multimedia-based objects i.e. those incorporating audio-visual, sound, image, text, etc.
- Growing lack of distinction between certain types of objects in electronic form. For example, a statistical text such as *HyperStat Online Textbook* <<http://davidmlane.com/hyperstat/index.html>>, which is rendered in HTML and contains interactive components, appears to be a freely-accessible learning object whereas once it would have been a bibliographic object. (Odlyzko 2002).
- Growth of “thing(s) on (the) net that (have) intellectual characteristics in common with monographs, encyclopedias, interactive games, (but) we don’t really know what the hell it is,...(and are) turning out to be significant...” (Lynch 2002a).
- Growth of self-published objects which may or may not have intellectual integrity or may, in fact be, deliberately misrepresentative.
- Increased role for authenticated content e.g., credentialed and intellectually complete especially among non-traditional content e.g., data sets.
- Development of personalized content in library-based systems through various forms of “recommending” technologies (Lynch 2001).
- Consolidation of commercial and not-for-profit gateway services that provide access to (variously) refereed websites.
- Continued growth of a “supply on demand” mentality versus a “just-in-case” perspective.
- Continued accessibility barriers with e-resources.

Conclusion

Regardless of the formats collected, collection development for any library service must be informed by “previously defined and agreed-on collection policies *and* selection criteria” (Pitschmann 2001) (*italics added*). These policies “allow staff, over time, to select content that is consistent with their institution’s missions or long-term goals” (*ibid.*).

The need for highly detailed selection criteria may not seem important for either staff or users in an organization that has collected in one specific area for a very long time. In reality, however, such an organization may be operating by de facto, user-oriented rules that exclude (or include) at different points in time enormous quantities of content based on assumptions of the collections' goals and its user communities. Ensuring selection criteria (and collection development policies) are codified, made available to all library workers, and routinely reviewed and updated, allows much smoother integration of new formats and content areas, by ensuring librarians understand that in librarianship, what Andrew Abbott (1988) called the "heartland of work," is delivering information to users, not acquiring and storing specific formats; as Marvin Scilken put it, "libraries exist for readers" (Roy and Cherian 2002). It is no accident that S.R. Ranganathan's first law of librarianship is "Books are for use" (Ranganathan 1988).

One important role of collection development and selection criteria is to help define the scope of task for selection specialists; that is, in an information universe of immense size and complexity, collection development policies immediately narrow the scope of desirable collection content to a quantity that seems both achievable and knowable. The remaining content—however potentially valuable in other settings—recedes from view, and the content that is the focus of the selection criteria is thrown into sharper relief. Libraries benefit from the cost savings of a focused workforce that understands what it is selecting, how to do so, and why.

Again, regardless of the medium or format, collection development and selection criteria have several user-oriented roles. These roles are well-articulated in the DESIRE Information Gateways Handbook and repeated with discussion in Pitschmann (2001), but the core issue worth repeating here is that for users, both collection development and selection criteria play crucial roles similar to the narrowing/focus role discussed above. The difference, of course, is that users are usually unfamiliar with the selection criteria per se, but they can be very familiar with the collection.

Appendix A

The types and subsequent criteria listed below are from Bopp, R.E. and L.C. Smith (2001), *Reference and Information services: An Introduction*, except where noted by parentheses. Parentheses indicate implied text. Note: The criteria are not necessarily in their original order, but have been changed to promote comparison and readability.

Reference resources	Directories	Almanacs, Yearbooks, & Handbooks	Biographical Sources
Format: print/microform/electronic, physical makeup, illustrations,	Format		Format
Scope: purpose, coverage, currency	Scope Currency	Comprehensiveness Currency	Scope Comprehensiveness Currency
Relations to similar works: uniqueness, spinoffs, new editions		Uniqueness	Uniqueness
Authority: authorship, publisher/sponsor, sources of information		Documentation	References
Treatment: accuracy, objectivity, style/audience	Accuracy	Accuracy	Accuracy (Audience)
Arrangement: sequence, indexing		Indexing Format (e.g.) organization	
Special Features (including) searching, display, documentation, training, customer support, effective use of hyperlinks			
Costs: price, licensing conditions			Cost

Dictionaries (thesauri, and quotation books)	Encyclopedia	Geographical sources (maps, atlases, gazetteers, and travel guides)	Bibliographical sources (catalogs, serials and newspapers)
Format	format arrangement	Format	Arrangement
Scope	Scope: focus, coverage,		Scope
Currency	Currency	Currency	Currency
	Uniqueness		
Authority	Authority	Publisher/Authority	Authority
Accuracy	Accuracy: reliability and objectivity (Scope:) audience/style		
Indexing	Indexing (Access)	Indexing/Place Names	
		Color and symbols	
		Scale and projection	

Indexes and Abstracts (periodicals, table of contents, subject, citation, and reviews)	Government Documents and Statistics sources[§]
Format	(Formats)
Scope	
Uniqueness	
Authority	(Citations)
Accuracy	
(Audience)**	
Arrangement	(Ease of use) (Indexing)
Cost	(Price)
	(Features)

[§] "...acquisition of depository materials (government documents and statistics sources) is, in general, routine (540) However, 'features, formats, indexing, ease of use, and price, as well as the inclusion of complete and accurate citations to the original sources (should be evaluated)."

** "(Audience)" equals needs of users.

Full text coverage ^{††}	
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^{††} "...full text" does not have a standard definition when applied to electronic publications with print counterparts" (514). Definitions may include selected article, sidebars, illustrations, letters to the editor, short columns, book reviews, advertisements, and supplements (ibid.).

Appendix B

The types and subsequent criteria listed below are from Katz, W. (2002) *Introduction to Reference Work Volume I: Basic Information Sources*, 8th ed. and *Introduction to Reference Work Volume II: Reference Services and Reference Processes*, 8th ed. except where noted by parentheses. Parentheses indicate implied text.

Encyclopedias	Almanacs, Yearbooks, & Handbooks	Biographical Sources	Dictionaries
Format: illustrations, size of type, binding and volume size	Illustrations	Photographs	Format
Scope: age level and emphasis		Selection criteria Content by and about subject	Vocabulary; Etymologies; Definitions; Pronunciation; Syllabication; Synonyms; Grammatical information; Encyclopedia material; Spelling; Usage
Recency: Continuous Revision	Current information	Update frequency	(Currency)
Authority		Authority Publisher	Authority
Viewpoint and Objectivity		Audience	Bias
Writing Style			
Arrangement and Entry	Arrangement	Arrangement Length of entry	
Index		Index and cross-references	
Cost			
Sales practice			

Geographical sources	Government Documents ^{**}	Electronic Databases ^{§§}
Format	(Ease of use) (Ease of access)	Ease of searching Interface Ease of access
Scope		Purpose Content Coverage
Audience		Audience
Currency		Updates
Publisher		
Index		
Evaluation		
Scale		
		Guides to use
		Cost

^{**} Government Documents:

"There are no problems with evaluation of government documents; there are no choices...one either accepts or rejects...(and) many government documents are unique and no one, but no one, is going to challenge them with another publication" (388 & 389).

^{§§} Databases: The primary concern is threefold and true to all sources: (1) What is the content? How much or how little of the subject is covered, and for what period of time? (2) What is the primary purpose of the source – to educate, inform, entertain? (3) Who is the audience – the child, the adult, the specialist? (VII, p. 40)

Appendix C

The types and subsequent criteria listed below are from Wood, R. and F. Hoffman (1996) *Library Collection Development Policies: A Reference and Writers' Handbook*, Chapter 3, pp. 38-39 except where noted by parentheses. Parentheses indicate implied text.

Books	Formats*
General:	(General)
User needs and wants	Applicability to user needs
Holdings of other libraries	(Holdings of other libraries)
Lacunae - gaps in the collection	(Lacunae)
Content	Choice of specific materials/ Content
Recency	Recency/Timeliness
Free of bias	Accuracy
Truth/authoritativeness	Truth
	Novelty
Reputation of author or publisher	Reputation of the sponsor
Special features e.g. index, bibliography, footnotes, pictorial formats--diagrams, maps, etc.	Arrangement of the material
	Technical quality
	Distracting elements - including "commercial huckstering"- eliminated or minimized
	Choice of media formats
Presentation - style of writing, readability, etc	Effectiveness of communication
Paper, typography, design	
Physical size	
Binding	
Paperback/hardback	
	Purposes and uses
	Convenience of use
	Equipment required
	Durability
	Price

*Formats cited by Wood and Hoffman include: Books; Manuscripts and related archival material; Newspapers; Periodicals, conference proceedings; Government publications; Pamphlets, broadsides, etc., Printed music; Maps; Vertical file materials; Pictures, photographs, posters, framed art, postcards, etc.; Microforms; Slides; Audio-recordings; Video-recordings; Films; (Filmstrips; Media kits; Computer software; CD-ROM software; Realia (3-dimensional learning materials); Collectibles, museum objects (Chapter 3, pp. 49-50).

Appendix D

The criteria and explanation are by Mary Woodley, unpublished data.

Criteria	Explanations
Scope (purpose, coverage, audience)	Aims of the project that effect selection; whole collection or selection
	Audience
	Needs
General Assessment	Strengths in a collection or topic and research trends
	Relation to mission of institution
	Context of collaborative effort
Formats	Any two or three dimensional object or event that holds cultural value
Specific Assessment	Condition; conservation concerns associated with the objects
	Value (education, historical, cultural)
	Intellectual value for intended audience
	If identification of the target audience is broad (K-Gray ^{***}), how to choose the level of content for each piece and whether only a representative sample of entire collection is included
Other Factors	Authenticity
	Information of content high
	Intellectual significance
	Representative
	Collection substantive
	Added value if digitized (presentation and interpretation)
	Feasibility (costs, copyright issues)
	Donor interest / permissions
Cultural group privacy / permissions	

^{***} Life-long learners

Appendix E

The criteria, specific to commercially available e-journals, are from Jones, Wayne, eds. (2003) "Acquisition and Collection Development" in *E-Serials: Publishers, Libraries, Users, and Standards*. 2nd ed., pp. 41-117.

Criteria	Commercially Available E-Journals
Scope (purpose, coverage, audience)	Content important to institutional needs/constituencies – Especially in the case of aggregator packages, need to be mindful that constituency may span multiple departments; consortial interests
Content Recency / Revision	Regular updating, internal link maintenance
Update notification	Availability of MARC records and record update service to reflect changes in package coverage (eg. new titles/ embargoed articles)
Access	Technical requirements/Access restrictions
Relation to other works, uniqueness	Price and ease of use compared with same/similar content in print form How do contents and searching/display features compare with other aggregator packages
Authority/authorship/publisher /sponsor/source of information	(authority)
Treatment: Accuracy, Viewpoint/Objectivity	(objective)
Special features:	Search Capabilities/Indexing Ability to search across other titles in package.
	Display Features
	Customer/Technical Support/Documentation/ Training
	Effective use of hyperlinks
	Full text/embargoed material
	Good access model/ authentication methods, remote access
	Error messages, other features of interface configurable by institution
	Availability of usage statistics
	Individual titles have own URL (Open URL compliant?)
	(Output capabilities) Ease of printing
Archival policy	Archival policy

Appendix F

The types and subsequent criteria listed below are based on "Examining Networked Resources Content Checklist"

<http://www.library.yale.edu/ecollections/ereschecklist.pdf>, as cited by Timothy Jewell (2001), *Selection and Presentation of Commercially Available Electronic Resources: Issues and Practices*.

<http://www.clir.org/pubs/reports/pub99/contents.html> (accessed June 13, 2003)

Criteria	Explanations
Content	Comparisons with printed versions in terms of such considerations as completeness versus selectivity, back-file coverage, and update frequency
Added Value	Wider access, searchability, potentially greater currency
Presentation or Functionality	Usability, searching and limit functions, linking
Technical Considerations	Hardware and software requirements, including storage space, Web browser compatibility, plug-in requirements, and authentication
Licensing and Business Arrangements	Problematic license restrictions, ongoing access rights, costs
Service Impact	Documentation, publicity, staff training needs

Appendix G

The types and subsequent criteria listed below are based on Pitschmann, Louis A. (2001) *Building Sustainable Collections of Free Third-Party Web Resources*. <http://www.clir.org/pubs/abstract/pub98abst.html> (accessed June 13, 2003)

Context Criteria	Applies to the origin (provenance) of a site and its content, as well as to the suitability of a new resource to an existing collection
Provenance	Origin or source
Relationship to Other Resources	Integrity of its individual components
Content Criteria	The most important criteria
Validity	Objective truth
Accuracy	Correctness of details
Authority	<ul style="list-style-type: none"> • the creator of the site • the creator's reputation • where the server is located • how many other sites link to it
Uniqueness	A measure of the amount of primary (i.e., original) information contained in a site
Completeness	The availability of content at a particular site
Coverage	The depth to which a subject is treated
Currency	The degree to which the site is up-to-date
Audience	Intellectual level of content
Form/Use Feature (Accessibility) Criteria	Features that determine how the content is presented and how accessible it is
Composition and Site Organization	Whether the Web site content is logically or consistently organized or even divided into logical, manageable components that meet the needs of the intended users
Navigational Features	Including software applications (such as special viewers), layout, design, search functions, and user aids as well as indexing and search capabilities
Recognized Standards and Appropriate Technologies	Standards and technologies used in developing a site
User Support	Content (e.g., scope statements and collection policies) and technological applications
Terms and Conditions	Agreement to specific conditions
Rights Legitimacy	Restrictions on the content at that site
Process or Technical Criteria	Those technical features that measure the integrity of a site and the availability of content
Information Integrity	How successfully the value of the content

	remains current or improves over time
Site Integrity	The stability a site exhibits over time and to how a site is administered and maintained
System Integrity	The stability and accessibility of the server hosting the resource

Appendix H

The types and subsequent criteria listed below are from Digital Library for Earth System Education (DLESE) Metadata http://www.dlese.org/documents/policy/CollectionsScope_final.html, and Kastens, Kim A. and John C. Butler (2001), "How to identify the 'best' resources for the reviewed collection of the Digital Library for Earth System Education", *Computers and the Geosciences* 27 (2001): 375-378. <http://www.ldeo.columbia.edu/DLESE/collections/CGms.html>. Note: The criteria are not necessarily in their original order, but have been changed to promote comparing and readability.

Digital earth science resources for educational purposes	Geospatial data for climate or environmental change
Scientifically accurate	Scientifically accuracy
Importance or significance	Relevance
Pedagogical effectiveness	
Well-documented	
Ease of use for students and faculty	
Power to inspire or motivate students	
Robustness/sustainability as a digital resource	
	Available/accessible
	Authority
	Date/currency
	Audience

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