Criteria for Selecting Electronic Books in an Academic Library: Will We Ever Need to Buy Paper Again?

By Sandy Campbell
Science and Technology Library
University of Alberta
Edmonton, Alberta, Canada

Based on the assumption that all books will soon be available in both electronic and paper formats, selections librarians will soon be faced with a format decision for each title they purchase.

The work of Summerfield, Mandel and Kantor at Columbia University has given us some early information about the ways in which academics use electronic materials. They identified length of use ("read little" vs "read much") as being a defining factor in a scholar's preference for electronic or paper format[1]. With this factor in mind, qualitative research was undertaken at the University of Alberta to determine whether or not there are general or specific criteria which would help selectors determine which books would be "read little" or "read much" by faculty.

Faculty members in a variety of subject areas were introduced to netLibrary or ENGnetBASE publications. They were then asked a series of questions about their potential use of the materials. The explanations for their choices were noted and revealed patterns of factors affecting their choices. These patterns form some preliminary criteria for selectors who need to choose between e-books and paper books.

Background

In the fall of 1999, the University of Alberta library took part in a consortial purchase of 1078 netLibrary titles through the Council of Prairie and Pacific University Libraries (COPPUL). The netLibrary books were selected by publisher and through a vote on very broad subjects. As a result of this selection method, and the general lack of availability of certain subject areas within netLibrary, the content of the collection did not cover all subject areas taught at the University of Alberta.

ENGnetBASE service had been acquired in early 1999 and contains full text monographs in some of the subject areas not covered by the COPPUL netLibrary purchase.

The Science and Technology has written collections policies that include definitions concerning the formats of materials purchased. In general material may be accepted in any format, as long as the capability to read that format exists. However, when multiple formats existed, selections decisions have been made on a case-by-case basis, based on a variety of factors including robustness and expected life-span of the technology, benefits of the technology and preferences expressed by the requestors of the materials.

With the potential for every monograph to be available in electronic format there is the potential for every monographic acquisition to involve a format selection decision. Selectors therefore needed to develop guidelines to streamline the case-by-case decision making. Apart from some of the obvious application of e-books, such as reference works and reserve materials, it was unclear whether or not there were general criteria that could be applied across the library and specific criteria which could be applied to individual subject areas. A review of the literature revealed that, while there was much discussion about electronic books, little had been written about selection criteria for the format. The development of these criteria within the Science and Technology Library is an ongoing process.

Process

Based on an assumption that our primary criterion for the choice between electronic and paper monographs would be the usefulness of either format in the research and teaching environment, interviews were conducted with sixteen faculty members to collect their responses to electronic books.

Participants were selected for their willingness to take part in the study, their availability during the study period (July and August) and their known use of the library. Attempts were made, with varying levels of success, to include males and females, new and experienced faculty and faculty who were known early adopters and late adopters of technology. Faculty members from fifteen different disciplines were interviewed.

Faculty members were contacted by telephone and an appointment to meet in their offices, if they had computers located there, was made. Each person received an introduction to netLibrary and was coached through the process of finding an electronic book, related to their subject area. If no materials related to the subject area were available, ENGnetBASE was also demonstrated.

Each person was then asked a series of questions related to their perceptions about when electronic or paper books would be most useful, while the interviewer noted their responses. Because the interview was in the nature of a conversation, sometimes not all of the questions were asked. The responses were then reviewed and general and specific criteria extracted.

Results

General Observations

Each of the faculty members interviewed had some clear understanding of the kinds of materials which would work electronically and which would not. In most cases, they were able to turn to their bookcases and easily identify books that they would want in either format.

In general, the level of ease with electronic information delivery among the faculty interviewed is quite high. All have access to the Internet from their offices (although some had taken equipment away for the summer). All had used the library's

Web catalogue. Several had web pages for their courses and were quite well versed in the differences involved in writing for the Web and writing for paper presentation.[2]

During the course of discussions, it became apparent that much of the faculty's professional use of books fell into the "use little" category. Therefore, in theory, most of their needs should be served well by e-books. If one were to consider this criterion, alone, e-books should become the default format for selection. However, we know that many other factors and concerns such as archival ownership of e-books; longevity of the delivery software; availability of inexpensive, multipurpose reader equipment; lack of standard practices for inter-library loan of e-books and a general lack of knowledge about how e-books will be used, among other issues, are currently limiting libraries' willingness to purchase exclusively in electronic format. These issues are the subject of much discussion in many venues.

In this study, the faculty members were able to take us a few steps closer to understanding how electronic books might be used and when they would be the most appropriate choice. They were able identify some kinds of books that they would prefer in electronic format, some that they would prefer in paper and some that they would prefer in both formats.

Preliminary General Criteria for the Selection of Books in Electronic vs Paper Formats

When do researchers prefer books in electronic format?

1. For delivery

   Some faculty members viewed the electronic format primarily as a delivery format. They considered e-books most functional when they could be quickly and easily printed and read in paper format.

   While this clearly expresses a preference for print format for end use, the ability of the user to download and print the book may be sufficient reason for the library to prefer the electronic copy. Easy printing of the complete volume is not currently possible within netLibrary, but is possible within ENGnetBASE.

2. Electronic functionality within the text of the e-book.

   In general, the faculty interviewed expressed disappointment that there was not more functionality available in the netLibrary e-books. They expected e-books to make the same kinds of links and incorporate the same kinds of multimedia that one finds on web-sites. They were also able to identify specific kinds of monographs which are complex to use in paper format (example: botanical keys and field guides) which would be easier to use if you could search them or links were incorporated into them.

3. Enhanced functionality within the "library" or provider

The ability to search across text of several books at once, as one can with ENGnetBASE and netLibrary was seen as an advantage, both for reference purposes and for textual analysis (example: the complete works of Chaucer).

4. "Read little" materials

Some of the kinds of books which the faculty members identified as good candidates for e-book purchases have already been identified in the literature.[3]

a) Reference works including: encyclopedias, dictionaries, directories, handbooks, databooks, standards, etc.

b) Textbooks used as reference or reserve readings

While all of the faculty supported the purchase of e-textbooks for quick reference purposes, several felt that students still needed to own paper textbooks to understand the development of the subject. In particular, a faculty member who has had paper and electronic variations of his textbook available for several years, stated emphatically that undergraduate students needed the structure of the paper texts.

c) Collections of papers / conference proceedings which most often get used in the same way as e-journals.

d) Narrowly focused works of a technical nature.

e) Geographically peripheral books. In some disciplines, geography is an important factor in what is studied. For example, in Forestry, the local boreal forest is the focus of much of the research and teaching done at the University of Alberta. While tropical forestry literature contains important related information, it would be peripheral and fall into the "use little" class for most studies done at the University of Alberta.

When do researchers prefer books in paper format?

1. Book as object

For some researchers, the physical presentation of the book is the focus of study or contributes to the understanding of the content and its impact.
Binding, paper quality, typeface, colour, marginalia and annotations may all be significant. Fine bindings and functional books (pop-ups, textured, push-button, write and wipe, etc) are examples of books that will continue to be required in "paper" format.

The use of the book as an object extends beyond the obvious areas of "bibliography" within the disciplines of library science and literature. For example, an Anthropologist interviewed studies native oral history. Looking at an early publication of native folktales, she needed to study the binding of the book to determine the intended audience of the publication. The folktales might have been rewritten to make them acceptable to a particular audience.

2. "Read much" books

a)Study of a peripheral or tangential area

Researchers may find that information from an allied field outside of their normal range of study becomes important. At this point, they are in "learning mode" and need to intensively study a text on the subject.

For example, a political scientist working on the Middle East may be alerted to the fact that water management is a key political issue and may need to intensively study the geology of the water supply in the area.

b)Techniques or methods books

These might be likened to high level cookbooks or "how-to" books.

Researchers moving into a new phase of study or a new research project sometimes find that there is a technique or tool about which they know little and where they quickly need to "come up to speed". This may be accomplished by intensively studying a thorough monograph on the subject and perhaps practicing the technique directly from the book to determine if it will be useful.

For example, an ecologist, looking at the presence of ash in lake sediment cores might find that dendrochrology or tree-ring dating, would be an effective tool to supply related eco-historical data, but one that she has never used before. Several hours spent with Cook and Kairiukstis's *Methods of Dendrochronology: applications in the environmental sciences* would allow the researcher to determine how the procedure works, equipment required, regional variations, and limitations of the process.

c)Books containing large format foldout maps, plans, posters, etc.

This category will continue to be required in paper format until high-quality plotters become common.
Large size, large-scale maps often show features that may be several feet long and need to be viewed in their entirety to be understood. While one can move around on the surface of a map on a 17" monitor, it is not possible to see the whole map at once at the most detailed scale.

For example, USGS geological maps were cited as ones which researchers need to view in their entirety.

d)Books in which a thesis or narrative is built over successive chapters.

Some books are designed to be read beginning to end and cannot be "dipped into". In these books, in order to understand chapter 4, you need to have read chapters 1-3. Many textbooks, novels and long poems are examples of this type of book.

e) Historical, theoretical, and analytical works

Historical, theoretical and analytical works dealing in a detailed way with a single subject tend to fall into this category. For example, within the study of Plant Science, the following title was cited as an historical overview that would be read for background information and interest, rather than as a research tool.

Viola, Herman J. and Carolyn Margolis. **Seeds of change: a quincentennial commemoration.** Washington: Smithsonian Institution Press, c1991.

f) Canonical works

"Canonical works" are those that are considered core to a discipline. Usually applied to sacred texts or literature, the term can be expanded to describe those works that form the core literature of any field. Within Canadian Literature, new works by Ondaatje or Atwood would fall into this category. Within Environmental Studies, works by Suzuki would be part of the canon.

When do researchers prefer books in both formats?

1. Books which were used as a learning tool early in one's career may become a reference tool later on and therefore would fall into both the "use little" and "use much" categories.

2. Books in Literature are usually read cover to cover and therefore fall into the "use much" category. However, the textual analysis of those same works is ideally suited to computer function, which makes them good choices as e-books, as well.

Some Specific Criteria Identified by University of Alberta Faculty Members

Animal Science

Paper - classic texts

Example: Lawrie, R. A. **Lawrie's meat science**, 6th ed. Cambridge : Woodhead, 1998

Electronic - works which can be used for reference

Example: Committee on Drug Use in Food Animals, Panel on **The Use of drugs in food animals: benefits and risks.** Washington, D.C.: National Academy Press, 1999.

Botany

Paper - core works in the field should be maintained by the library in paper copy

Electronic - keys to plants work better in e-format, if there were good search capabilities and they were portable.

Example: Budd, A. C. ***Budd's Flora of the Canadian prairie provinces***. [Ottawa] : Research Branch, Agriculture Canada, 1979.

Chemistry

Paper - only historical or theoretical works need to be in paper

Example: Berson, Jerome A.. ***Chemical creativity: ideas from the work of Woodward, Hückel, Meerwein, and others.*** New York: Wiley-VCH, 1999.

Electronic - all chemical research materials

Example: McFarlane, Joanna, J.C. LeBlanc. ***High-temperature chemistry of molybdenum, cesium, iodine, and UO2+x***. *Pinawa, Man.: Whiteshell Laboratories, 1996.*

Environmental Studies

Paper - core or classic works in the field should be available in paper

Example: Suzuki, David T. and Amanda McConnell. **The sacred balance: rediscovering our place in nature.** Vancouver: Greystone Books, c1997.

Geology

Paper - large format maps would need to be kept in paper because we don't have large enough screens

Example: USGS Maps.

Electronic - most geological monographs

History

Paper - materials that are broad works covering a large field in paper

Example: Dobson, Mary J. **Contours Of Death And Disease In Early Modern England** Cambridge; New York, NY, USA: Cambridge University Press, 1997.

Electronic - edited collections of articles

Example: Porter, Roy and Mikulás Teich, Eds. **Drugs and narcotics in history.** Cambridge [England] ; New York: Cambridge University Press, 1995.

-narrowly focused technical works

Example: Jackson, Robert H. **Indian population decline: the missions of northwestern New Spain, 1687-1840.** Albuquerque: University of New Mexico Press, 1994.

Literature

Paper - "the canonical works" should be available in paper format

Example: Ondaatje, Michael. ***Anil's ghost***. Toronto: M&S, 2000.

- works for which the binding/ printing or illustration is significant

Electronic - if the canonical works are presented in a format in which the text is searchable, then they should be the first titles purchased electronically, so that textual analysis can be done.

Example: All of Chaucer's works.

Materials Engineering

Paper - highly illustrated works in paper- particularly if there are microstructure images

Example: Michael Wayman, Ed. **The ferrous metallurgy of early clocks and watches: studies in post-medieval steel**. London: British Museum Press, 2000.

Mechanical Engineering

Paper - historical/biographical works

Electronic - all books would work well in electronic format

Plant Science

Paper - historical or broad overview texts

Example: Seeds of change

Electronic - texts which contain procedures/processes

Example: Pomeranz, Y. Ed. ***Wheat: chemistry and technology***. St. Paul, Minn.: American Association of Cereal Chemists, c1988. 3rd ed.

Soil Science

Paper -

- students should get to know their textbooks as paper texts.

Example: Juma, N. G. ***The Pedosphere and its dynamics: a systems approach to soil science***. Edmonton, Alta.: Salman Productions, 1999.

Electronic - electronically enhanced textbooks

Example: Juma, N. R. ***The Pedosphere and its dynamics: a systems source to soil science***. Edmonton: University of Alberta. Dept. of Renewable Resources, c1998-. http://www.pedosphere.com/

Zoology

Paper - Key works in the field should be maintained by the library in paper copies

Electronic - field guides would work well in e-format if searchable and portable.

Example: Bull, John L. ***The Audubon Society field guide to North American birds, eastern region.*** New York: Knopf, c1977.

Conclusions

Apart from the preliminary criteria described, this study revealed two things. First, some of the e-books purchased by the COPPUL consortium through netLibrary fall into the "use much" category. It is likely that readers will want libraries to provide these titles in paper format, as well.

Second, this study has demonstrated that it is possible to define both general and specific criteria for the selection of e-books. However, a great deal more research will have to be undertaken before those criteria are thoroughly defined and understood.

References

1. Summerfield, Mary, Carol Mandel, and Paul Kantor. *The Potential of Online Books in the Scholarly World - From the Columbia University Online Books Evaluation Project.* December 1999. **http://www.columbia.edu/cu/libraries/digital/olbdocs/potential.doc** , p.17.

2. Outing, Steve. *ePublishing Column. "Teacher says: how to write for the web",* *Writer's Digest,* vol.80, no.11, November, 2000, p. 56-57.

2. Summerfield, Mary, Carol Mandel, and Paul Kantor (December, 1999), p.2.

APPENDIX A

University of Alberta
Science and Technology Library

E-book Interview Questions

Department _____
Assuming that all books (monographs) were available to you in electronic format and print format:

1. When do you think that you would prefer to use a book in e-format.

2. When do you think that you would prefer to use a book in paper format.

3. What would prevent you from using the electronic format of a monograph?

4. How many pages would you read on line before you decided to print the text?

5. How often do you read a substantial portion of a book at one sitting?

   Often Occasionally Amost Never

6. Under what circumstances do you thing that we should buy the e-version of a book?

7. Under what circumstances do you think that we should buy only the paper version of a book?

8. Under what circumstances should we buy both the e-version and paper version of a book, recognizing that that would prevent us from buying any version of another title.

SMC/June 06, 2000

Contact Information: Sandy Campbell
Science and Technology Library
Cameron Library
University of Alberta
Edmonton, AB
(780) 492-7915
sandy.campbell@ualberta.ca