In his *In Praise of Scribes*, a late 15th century treatise on the new technology of the printing machine, a German monk named **Trithemius** wrote, "he who gives up copying because of the invention of printing is no genuine friend of holy scripture...printed books will never be the equivalent of handwritten codices..." He goes on to say that "writing — if it is on parchment — will be capable of lasting a thousand years, but printing — since the material is paper — how long will that last?"

After the **Gutenberg revolution**, these fears and predictions slowly disappeared and few remember that these conflicts even existed. The enduring presence of the printed word has led information age philosophers such as **Michael Heim** to assert that a "book defines a certain way in which access to the things in the world is fostered, a certain modeling of the way things are held up to attention." Since the evolution of printing in the 1400s, we have come a long way not only in the form, content, typeset, and binding of printed materials, but also in the way we collect, organize, store and retrieve them.

Just as it seems that we have accomplished the insurmountable task of organizing the printed word, the publishing world is in the middle of another transition. The advent of the **World Wide Web** has changed the way we interact with information. In the publishing and library world, this next wave of change arrived in the form of the electronic journal. As journal publishers rushed to take advantage of the potential ease of access provided by the Web, librarians were left with a number of issues regarding access, storage, retrieval, and cost of the new format. While journals existed electronically in "plain text format" in the 1980's, *Postmodern Culture*, first published in 1990, is recognized as one of the first of the new online journals. Fifteen years later, it is estimated that there are more than 30,000 journals, magazines and newsletters available online. The rapid advance of the electronic journal and the fact that some are less expensive than their print counterparts has meant big changes in the way that libraries provide access to journal content for their patrons. The **April 2003 issue of Against the Grain (ATG)** was dedicated to discussing these challenges. Authors of articles in the April 2003 issue discussed the complexities of copyright and licensing, the pros and cons of electronic vs. print retention, and the impact of the transition between the two formats on both libraries and patrons.

A review of the literature over the past five years indicates that access, cost, and education are just some of the important issues for libraries as they decide which format to retain in their collection or whether to retain both. In the past few years, several quantitative studies aimed at examining the differences in cost and usage between print and electronic formats have emerged. These studies provide further evidence that the advantages and disadvantages of electronic vs. print formats continue to be complex and challenging. In order to get a feel for how these issues affect library employees on a day-to-day basis, we drafted an informal survey and submitted it to the following list-serves: LIBREF-L@LISTSERV.KENT.EDU, CHILD LIT@EMAIL.RUTGERS.EDU, ILL-L@ALAN.ORG, CANMEDLIB@CLIFFY.UCS.MUNCA, and SERIALIST@LIST.UVM.EDU.

The survey consisted of a variety of open-ended questions that invited respondents to consider the ways in which working with electronic or print materials has affected them, asked them to speculate about the future, and comment on any improvements they would like to see. We had 155 librarians and auxiliary library employees respond to the survey. The majority of the respondents were from the United States and Canada. 69% of the respondents came from academic libraries, 11% from special libraries, and 8% from public libraries. 3% from school libraries and the remaining 9% selected "other" as library type. The respondents were an experienced group, with more than 45% having ten or more years of experience, 36% between six and ten years and the remaining between 3 and 6 years. Although their job titles were incredibly varied, most of the respondents stated that they had responsibility for either some or all of the collection. By using examples from our survey to elucidate the previously identified challenges, we will reveal that while much has been improved in electronic journal publishing, many unresolved issues continue to exist.

**Access**

For most patrons, access to an electronic journal has never been easier. As long as the journal they want is subscribed to by their library, they can access the full text of the article directly from any desktop computer. Most libraries provide remote access to journal content and some access to electronic books as well, which, for the patron, means more convenient access to the materials they need. But, for librarians, the process of providing electronic access to those articles is much more complex than providing access to print materials. The workflow process involved in creating both print and electronic collections includes "selection, ordering, cataloging, and providing reference and instructional support." But supporting an electronic collection has additional complexities such as licensing issues, complicated and costly pricing models, and different methods of access to consider.

Choosing the right type of access for patrons is just the beginning. Electronic journal licensing is a much more time consuming exercise than purchasing a book or a print journal. When a print book or journal is purchased by a library, it owns the physical entity and its content. In the electronic world, however, libraries often purchase rights to access the material, rather than own it. Consequently, once the subscription expires, access to the content expires along with it. Due to this complexity, some librarians comment that the process of acquiring access to an online title can often take much longer than providing access to a print title.

While many patrons enjoy the ability to link directly to the full-text of an article or book chapter while using electronic formats, linking brings its own set of potential disadvantages. For example, some journal publishers or database aggregators allow the patron to link directly to the article they wish to view or print, while others simply link the patron to the publisher of the content. If the patron is lucky, the publisher will recognize his or her proxy IP and allow access. If not, they may be forced to search for the paper again in the new site, register, and possibly pay for full-text of the article in which

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**Table 1: How can access to electronic journals be improved?**

<table>
<thead>
<tr>
<th>Answer</th>
<th>No. of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seamless access between databases from different publishers and aggregators</td>
<td>45</td>
</tr>
<tr>
<td>More affordable or free content</td>
<td>33</td>
</tr>
<tr>
<td>Stability of URLs/Better link resolvers</td>
<td>14</td>
</tr>
<tr>
<td>Standardized indexing between aggregators and publishers</td>
<td>11</td>
</tr>
<tr>
<td>Better training or educational materials for staff and patrons</td>
<td>9</td>
</tr>
<tr>
<td>Guaranteed access to past issues/archival content</td>
<td>7</td>
</tr>
<tr>
<td>More full-text content, including access to historical content</td>
<td>5</td>
</tr>
</tbody>
</table>

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continued on page 28
they are interested. Other barriers to access for patrons include lack of proper software installed on their home desktop, expired or improperly processed user cards, or lack of knowledge about how to properly access a particular database. Respondents in our survey indicated that there are still many improvements that can be made to electronic access (see Table 1), and were typically in agreement with the written literature above. The largest concern among this group appears to be the lack of consistency in interfaces between the various publishers. Many felt that a seamless interface for both initial access and searching would be a considerable improvement over the current model. There was also a strong preference for standardization across many areas of electronic journal publishing including linking, controlled vocabularies, search terms, and indexing. It was interesting to note that while most of our respondents from academic libraries were in favor of IP access, special and other small libraries desired the ability to choose an access type based on their needs/budgets and felt that publishers were not being flexible enough. URL and linking problems were number three on the list, and again, many of our respondents called for greater standardization and more stability — stability not only with platforms, links and mode of access, but also stability on the vendors’ part to keep their content in one database and not move them around so often.

The dilemma of ensuring future access to electronic material continues to challenge information managers, librarians, archivists, and the computer science community. In the meantime, librarians are left wondering whether the electronic books, journals and information on CD, DVD or other storage media will last as long as printed paper or microfiche. Therefore, many continue to have hybrid collections of print and electronic materials just in case an adequate answer to this problem is never found. Many of our respondents commented that lack of permanence and access to archival content were still major barriers to an electronic only library.

Education & Training

The complexities of granting and gaining access to electronic books and journals have also changed the skill sets needed to process and maintain these collections. This is true for both library employees and library users. While library patrons are expected to be information literates and cultivated critical thinkers, most do not need additional education to access the text of a print book or journal (unless, for example, it continued on page 30

NAME: Maha (lakshmi) Kumaran
BORN & LIVED: Born and raised in Chennai (Madras), India. I moved to Saskatoon, Saskatchewan in 1994 with my husband. Since then I have lived and worked in three different provinces in Canada.
EARLY LIFE: I am the first of the two daughters and since my sister was only a year and a half younger, I always had a playmate. I was interested in sports, music and traditional Indian dance. I won certificates in Javelin, Kho Kho (http://www.webindia123.com/sports/khotho/khotho.htm) a game played only in India as far as I know. I also won singing, dance and drama competitions in school. I once wrote a poem which my sister took to school and published under her name. So I am not sure I can take much credit for it now.
FAMILY: I am now married to an English Professor who teaches at St. Thomas More College, University of Saskatchewan. We have a five year old son who delights us.
EDUCATION: I have my masters in English from Madras Christian College, Madras University which is where the famous S. R. Ranganathan did his first degree. My bachelors was also in English Literature.
FIRST JOB: My first job was while I was still doing my Masters. I taught English as a Second Language to students of all ages in India. Later I was asked to teach first year English courses at the college where I did my BA.
PROFESSIONAL CAREER AND ACTIVITIES: I have just finished my library degree. Before that I worked at three different academic libraries and one public library. I look forward to pursuing a professional career in the same field soon. I am also doing indexing work for the National Japanese Museum. Since I really enjoy indexing, I wouldn’t mind a part time job in that field.
IN MY SPARE TIME I LIKE TO: Read newspapers, write articles, cook, play with my son and visit the public library with him.
FAVORITE BOOKS: Intellectual by Steve Fuller, biographies such as those of Malcolm X, Mahatma Gandhi, Winston Churchill, Pride and Prejudice and other works by Jane Austen, Shakespeare’s works, God of Small Things by Arundhati Roy, short stories of Somerset Maugham, works of Mark Twain — the list goes on and on.
PET PEEVES/WHAT MAKES ME MAD: When librarians refuse to understand each other (it happens sometimes) and get sarcastic with their comments. I really cannot stand people who refuse to look outside their own little world to learn something new.
PHILOSOPHY: Do your work and the rewards will come. Be true to yourself.
MOST MEANINGFUL CAREER ACHIEVEMENT: I started as a shelfer in Saskatoon Public Library in 1995. That was my first real library job and sometime in my first month, I said to myself I have to get a degree and take on more challenges. I waited patiently for an opportunity and after almost nine years I was able to enroll in MLIS program at UBC. It was not easy to be a full-time student, part-time employee, live away from my husband and manage a 3 year old. When I finished my degree in July I was truly happy and satisfied that I had finally accomplished something. I hope to research, write and publish in my career.
GOAL I HOPE TO ACHIEVE FIVE YEARS FROM NOW: Be a librarian in an academic or public library setting. Manage electronic information for a library, have my own Website up and running, continue working on my blog that is just born.
HOW/WHERE DO I SEE THE INDUSTRY IN FIVE YEARS: I have written another paper on the future of libraries. I believe libraries always have a place in the future: their content and format will be different and they might also look different if everything goes electronic. But in the next five years I see the industry coming up with better strategies to archive, access distribute electronic information throughout the world, especially to the developing countries that cannot afford big publishers. I also truly hope that the idea of an electronic library doesn’t stop with digitizing information but it goes beyond — to keep the idea of a community alive.
Dawn Bassett

1150 Rossland Street, Vancouver, BC V5K 4A1

BORN & LIVED: Born in Salem, Oregon but have lived in Vancouver British Columbia since the age of 2.

EARLY LIFE: Mostly grew up in Chilliwack, BC (a small farming community) and was out of there and off to Vancouver as soon as I graduated. I was an actor in highschool. So when I left, I went off to attend theatre school.

FAMILY: Most of my family still lives in Oregon. My father has been a writer for most of his life. My whole family is very musical and loves to sing and write songs and poetry. I am the oldest of 6 siblings who are split between two families (both my parents remarried while I was young).

EDUCATION: I have a diploma in Stage Management from Studio 58. I hold a bachelors degree in English Literature (first class honours) and a minor in technical theatre. I am 2 semesters away from completing my MIIS at SLAIS.

FIRST JOB: My very first job was working as a clerk in a doughnut shop on the graveyard shift. It was horrible and I made $3.00 an hour.

PROFESSIONAL CAREER AND ACTIVITIES: I am mostly self-employed at the moment. My full-time position involves managing records and developing a records index for a facility related project at Vancouver General Hospital. I also work the occasional shift at the Biomedical Branch Library for the University of British Columbia. Lastly, I provide information/search services for a few clients in the city.

IN MY SPARE TIME I LIKE TO: Spare time???? — Just kidding. In my spare time, I try to read and write, I spend time at the gym. I love to cook, and try to spend time either seeing theatre or being involved in theatre somehow when I can.

FAVORITE BOOKS: Thats a hard one! I am taking a class in Science-Fiction Fantasy right now and would have to say that that is my favorite genre of the moment, but it changes all of the time. I am quite fond of Michael Palins travel books series and enjoy graphic novels. The novels that I have enjoyed the most from my class were the Golden Compass books by Phillip Pullman.

PET PEEVES/WHAT MAKES ME MAD: Intolerance, racism, religious fundamentalism.

PHILOSOPHY: Whew! Tough questions. I would have to say it I guess that we are all on this planet together and we should try to recognize that and stop fearing each other and doing everything the media tells us to and try to make some changes before its too late.

MOST MEANINGFUL CAREER ACHIEVEMENT: I don’t think it has happened yet, but I have managed to get published in two different magazines this past year and that was a big achievement.

GOAL I HOPE TO ACHIEVE FIVE YEARS FROM NOW: I would like to find a permanent library position somewhere in the medical area.

HOW/WHERE DO I SEE THE INDUSTRY IN FIVE YEARS: Five years is not that far away and yet much could happen in that time. I don’t believe that we will see a large amount of difference in terms of physical space in libraries. I think that more services will become available electronically. I think that the consortium movement will grow as libraries continue to find ways to strengthen their patrons within their budgets.

After doing our survey, I am not sure that the electronic book will take off the way a journal has unless something is close to help people read off a screen. Perhaps devices like the Playstation-PSP will be a way that people can sit with a “book” in front of the fire, but I doubt it. It might take more than five years for publishers to figure that one out. I think that library interiors might start to change. We will probably see more computer stations and less shelving for journals, newspapers and magazines which are available online. I think that the librarian will gain further importance as educator in public and academic institutions.

When I first entered library school, I was told that this was the best time because so many librarians would be retiring in ten years. That was almost three years ago, but I don’t think this is going to happen in the next 10 or even 15 years particularly in Academic and corporate libraries. I think that because library schools jumped on the suggestion that the work force was depleting, there will be some kind of market saturation with all of us grads and jobs will be difficult to find.

I also think that the original projections did not take into account the fact that the baby boomer generation is generally healthier, living longer and hanging on to jobs as long as they can be- cause working feels good, and even the worst library paycheck is probably better than anything you would get on a pension (At least this is the case in Canada). This might mean that there will be more diversification of the role of librarian as an “newbies” get out there and try to make work for ourselves. The number of independent information professionals may grow because of this. It will also mean that all librarians will really need to keep on top of the latest industry and technology trend in order to survive the competitive climate.

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date these complex systems. In most cases both technical and public services library employees need to understand the issues involved in electronic access so that they can properly troubleshoot problems and provide reference services to their patrons. Although many library employees enjoy the challenges and opportunities of continuing education, the rapid change in technology also demands much of their already limited time and resources. Training for library staff and users was another area that the librarians we surveyed thought could still be improved (see Table 1). Survey respondents indicated that locating articles within aggregator databases is still a concern due to prevailing inconsistencies between publishers and commented that if standardization is not possible, more training and support must be provided, so that they in turn can pass this knowledge on to their patrons. With declining budgets and staff, many library employees cannot pay for the continuing education themselves so the more, low cost training available to them, the better.

Cost

Regardless of the format; access, education, storage and preservation all have their particular influence on a library budget. While much was written in the late 1990's that discussed the high subscription price of electronic journals compared to print, in 2000, Carol Hansen Montgomery began to assess other costs involved. The Drexel University study aimed to analyze the "operational costs associated with shifts in staffing, resources, materials, space and equipment." The preliminary results of this study concluded that the "per title subscription costs for electronic journals" was lower than the "per title charge" for print journals. Montgomery predicted that although electronic journals were "substantially more expensive to maintain," as the industry matured, the processes involved would "become easier, and therefore less costly for libraries." In 2002, Montgomery released a more thorough analysis of the study which demonstrated that "although an electronic journal collection results in increased costs of some activities, the advantages and decreased costs in other areas outweigh the increases." Montgomery warned, however, that the Drexel study was specific to her academic library and further study was warranted before any wide-scale conclusions could be drawn. Library employees in our survey largely responded that electronic subscriptions were still too costly. When asked if their budgets adequately served their collection needs, 56% responded "No" and 44% responded "Yes" (though many of these said they could always use more). Several respondents indicated that they supplement the cost of electronic journals and databases with the book budget. The responses also seem to indicate that not all libraries are finding the transition to electronic access affordable. This may be because many libraries are still faced with keeping both print and electronic and true operational efficiencies and cost savings are yet to be accomplished, since keeping both is likely the most expensive of the three options. More detailed studies need to be done in this area to determine the cost differences between print and electronic books, but it is likely that the same issues will apply. For example, print book costs include the expense of purchasing, shipping and handling, and the operational costs of processing the books. Since no equipment or digital infrastructure is required to access a print book, it is less expensive and less time consuming than electronic access. However, storing print materials can be quite expensive. As with electronic journals, it remains to be seen if the electronic book will prove to be more, less or just as costly as the print version, especially since the soaring popularity of the second hand book market has made print books even less costly than their electronic counterparts. When asked if there was a future for the print versions of either books or journals, many of our survey respondents commented, continued on page 34
Tell Me One More Time: Why Is It We’re Going Electronic?

by Rick Anderson (Dir. of Resource Acquisition, University of Nevada, Reno Libraries; Phone: 775-784-6500 x273) <rickand@unr.edu>

You know you’ve asked yourself this question, and maybe even posed it to your staff (or your boss). It’s one that comes up usually around the end of the day, when you were all set to go home; maybe you were even halfway out the door, and a staff member told you that the library’s access to ScienceDirect or the HighWire journals had suddenly gone down. Shoulders slumped, you returned to your desk and fired up the email again (it being too late in the day to get the provider on the phone), while muttering dire impercations under your breath about Al Gore or whoever it was that invented the Internet.

Life used to be so much simpler, didn’t it? Back in the day, libraries smelled like books. Now they smell like coffee. The library collection used to be something you could physically manipulate and something you could depend on; you didn’t have entire sections of shelved books suddenly disappearing into thin air for no apparent reason, only to reappear again in 10 or 30 or 500 minutes. You bought the book, you processed the book, you put the book on the shelf; and it stayed there. Nobody got hurt.

Of course, one reason that the book stayed there so dependably was that no one wanted to check it out. But that’s a topic for another essay.

For now, let’s focus on the reasons why it really is worth it to deal with the ambiguity, the complexity, the ephemeral, and the general, all-purpose grief that inevitably comes with shifting our collections from print to online formats.

Obviously, it’s not that there aren’t arguments both pro and con when it comes to going online. It’s just that the pros outweigh the cons so dramatically that, in most cases and for most types of research information, the decision really is almost a no-brainer. But let’s start by enumerating the benefits of print format.

Benefits of Print

Permanence. Books have a marked tendency to stay where you put them, to retain the content they held when you put them there, and not to disappear in a puff of smoke if left alone for an extended period of time. The same simply cannot be said of online products and publications.

Ease of use (for reading). Ah, print. You pick up the book, you settle down in a comfy chair, you flip through the pages, you read for hours and hours without developing a headache or a backache, and no former Nigerian cabinet minister will interrupt your reading with an offer to put a million dollars in your bank account.

When you want to read (rather than do research), print is as good as it gets.

Sensational enjoyment. Printed books — especially big, 400-page hardcover ones — feel good in your hand. They smell good. They give your bag or backpack some ballast, and make you feel less silly for carrying them around. If they’re bound well they’ll lie open on a table, which makes them the perfect accompaniment to a large, leisurely Mexican meal at a corner table near the back. They make you look smart.

The problem is that the benefits pretty much end there, and unless you’re a public library that caters primarily to readers rather than researchers, they aren’t benefits that mean that much to your patrons. Patrons care in a vague, platonic sort of way about permanence, sort of the way you care about a former boyfriend whom you’re not angry at anymore. If you ask a patron whether disappearing information is a good thing, of course he’ll say no. But if you ask him whether the benefits of immediate access, remote access, and 24/7 access outweigh the risk of spotty access, he’s going to say yes, and without hesitation. The problem with print is that you have to travel to get to it, it’s only available when the library is open, and although it’s a wonderful format for reading, it’s a terrible one for research. If your patrons are doing research, then print actually works against them in the ease-of-use area — they don’t want to sit down and read these products in a comfortable, leisurely way. They want to interrogate the content of these products in a fast and rigorous way. A back-of-the-book index is a horribly crude and ineffective (not to mention inefficient) way to do that.

So what does online format give us that print doesn’t? The list of benefits is almost frighteningly long and comprehensive.

Benefits of Online

Ease of access. Print is very easy to use once you get the book in your hand. But there’s the rub — getting your hands on the book can be a terrible chore. For many people (such as those with serious physical disabilities, those who live far away from a library or bookstore, and those who can’t see well), the difficulties of accessing printed information may actually be insurmountable.

Enhanced searchability. One of the great beauties of online information is the fact that its entire content can actually be searched. Full-text searchability offers exhaustive indexing where books, by their very physical nature, can offer only approximate indexing.

Portability of content/remote access. One big problem with print is its simple mass. You need an entire book cart to move the Grove Dictionary of Music and Musicians from one place to another. If you were to go out and buy a computer for each of your patrons, that would be such a costly and unworkable solution. With online access, you can provide your patrons with access to their personal computers and you can be assured that they have the computers.

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