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Why Print and Electronic Resources Are Essential to the Academic Law Library

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Why Print and Electronic Resources Are Essential to the Academic Law Library*

Michelle M. Wu**

Libraries have supported multiple formats for decades, from paper and micro-forms to audiovisual tapes and CDs. However, the newest medium, digital transmission, has presented a wider scope of challenges and caused library patrons to question the established and recognized multifformat library. Within the many questions posed, two distinct ones echo repeatedly. The first doubts the need to sustain print in an increasingly digital world, and the second warns of the dangers of relying on a still-developing technology. This article examines both of these positions and concludes that abandoning either format would translate into a failure of service to patrons, both present and future.

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** Director of the Law Library and Associate Professor of Law, Hofstra University, Deane Law Library, Hempstead, New York. At the time of initial drafting, I was employed by the University of Houston Law Center (UHLC) as Acting Director of the O'Quinn Law Library. I would like to thank both UHLC and Hofstra University for their support of my research and writing, and to the entire Marketing Toolkit Task Force of the AALL Academic Law Libraries Special Interest Section for their input and assistance. Special thanks to Patricia Kasting and Ann Gilmartin for their assistance in document retrieval.

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Introduction

¶1 With the advent of the Web and the proliferation of electronic information, law librarians are more frequently confronted with questions from their administrators and patrons on the present and future value of the printed book. Technology and its advantages—convenience, cost, timeliness—present an appealing future. So why would libraries continue to stock their shelves with printed texts, and why should their parent institutions provide space or funding for such acquisitions?

¶2 The answer is surprisingly complex, but it begins with the library's mission to meet current and future user needs. Not only does print still dominate in scholarly publication, but the rapidly changing technological environment contains inherent future risks for researchers and academic libraries. The same creativeness that spawns advancement and development also slows or prevents the adoption of stable standards in format, laws, and pricing. An environment that blossomed under constant change does not react well to restriction, and tying research or development to a particular standard would result in stagnation. Without such standards, though, a library cannot guarantee the preservation of information for future generations, and may even be frustrated in its goal to provide continued access to the current generation.

¶3 Some law school administrators will recognize this refrain and will join in demanding, "With such unpredictability, why collect electronic resources at all?" A partial answer resides in the convenience mentioned earlier, but it is only one facet of the analysis. The world of information gathering is in transition, and users have shown a marked preference and reliance on a technology, which, if not stable, will undoubtedly continue to thrive. Libraries, as information brokers, cannot reject data simply because it fails to comply with existing expectations or because its format of transmission is not yet fully developed. Instead, they must seek to harness its strengths and to educate users on its weaknesses.

¶4 The librarian's responses to the administration's questions on both sides of this debate have wide-reaching impact, from space allocation and budgeting to the content of the library's permanent collections and general user education. This article is designed to provide data to support the proposition that a twenty-first-century academic law library requires *both* traditional print materials and electronic resources.

The Value of Print (or Why We Still Need Books)

¶5 The core purpose of an academic law library is to serve the needs not only of today's users but also tomorrow's. It follows that the library must have an enduring collection of resources that is accessible and meaningful to both current and future scholars. For the reasons detailed in the following sections, physical formats will remain in collections for many years to come. As the world has seen with radio after television's debut, the creation of a new medium does not necessarily invalidate the former ones. Print is a time-tested format that continues to fulfill promises that technology cannot yet deliver.

Not Everything Is Online

¶6 A common fallacy is that all information is available on the Internet, whether free or through a fee-based service. Despite tremendous strides in electronic publishing and in digitization technologies, the majority of the world's published materials remain in physical (print or microform) formats only.¹ Since the invention of the Gutenberg press, the publishing world has produced more than five centuries' worth of materials, and recent efforts to digitize scholarly historical publications² have covered only a small proportion of these. For law schools,

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1. An examination of a subset of publishing in which e-formats are well established—periodicals—illustrates this point. Of 81,213 scholarly or trade journals, only 23,653 (approximately 30%) are available online. If the criteria are further limited to scholarly law journals, the percentage available online increases to 42%. However, an inspection of online availability notes reveals that most of these titles have limited archival coverage in the electronic format. See ULRICH'S INTERNATIONAL PERIODICALS DIRECTORY, available at <http://www.ulrichsweb.com> (last visited Jan. 11, 2005). Expanding the analysis to serials worldwide from 1971 to present, only 27,777 (2.4%) of the 1,125,507 records in the International Standard Serial Number (ISSN) register represent electronic publications. In contrast, 1,095,296 (97%) of the records are in print format. See INTERNATIONAL STANDARD SERIAL NUMBER, ISSN STATISTICS, at <http://www.issn.org:8080/English/pub/tools/statistics> (last visited Jan. 11, 2005).
 2. Recent digitization projects involving historical materials include the Library of Congress' American Memory Collection, at <http://memory.loc.gov> (last visited Jan. 11, 2005); JSTOR, at <http://www.jstor.org> (last visited Jan. 11, 2005); HeinOnline, at <http://heinonline.org> (last visited Jan. 11, 2005); Readex's Serial Set, at <http://www.readex.com/scholarl/serlset.html> (last visited Jan. 11, 2005); LexisNexis' Serial Set, at <http://www.lexisnexis.com/academic/serialset> (last visited Jan. 11, 2005); and the National Digital Information Infrastructure and Preservation Program (NDIIP), at <http://www.digitalpreservation.gov/index.php?nav=4> (last visited Jan. 11, 2005). Also, Google recently launched an initiative to digitize the collections of the New York Public Library, Harvard University, Stanford University, the University of Michigan, and Oxford. Google Press Release, Google Checks Out Library Books (Dec. 14, 2004), available at http://www.google.com/press/pressrel/print_library.html.

this historical component is particularly worth noting, as much of legal research depends on analyzing law's evolution.

¶7 Even in recent technology-friendly years, the printed book has not been made obsolete by e-publishing.³ In fact, in 2003, the output of print publishers outpaced that of previous years, and most of the produced titles were not available in electronic format.⁴ Notably for law libraries, the majority of legal treatises are not attainable in e-book format.⁵ These numbers demonstrate that libraries seeking to serve their patrons must continue to examine, evaluate, and collect print materials.

Materials in Electronic Format Are Not Always Free

¶8 A law library, even the most well-endowed one, has a finite budget, and its resources must be judiciously allocated among a range of interests and needs. Users who do not directly authorize purchases frequently overlook the cost component involved in selecting a library resource. With so much information available to Web surfers, it appears as if no-cost is the norm for e-resources. However, libraries can and do arrange for seamless authentication to fee-based resources, thereby eliminating the requirement for individual user passwords and identification information; thus, a resource appears "free" to end users. Such users are often unaware of any restriction to the resource until they attempt direct remote access and are prompted for a password.

¶9 Further, additional user-invisible costs may be appended to augment an existing product's scope. Docket information and Bureau of National Affairs (BNA) newsletters are examples of added costs to basic academic subscriptions. Both sources of data are available through Westlaw and LexisNexis but are not included as part of the base academic contracts.⁶ Libraries that acquire access through additional fees will perceive an enlarged database list, with the "new"

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3. Worldwide in 2003, more than four billion printed books in approximately 950,000 titles were published. PETER LYMAN & HAL R. VARIAN, HOW MUCH INFORMATION, 2003? (Oct. 27, 2003), at <http://www.sims.berkeley.edu/research/projects/how-much-info-2003>. (This study, by faculty at the University of California at Berkeley's School of Information Management and Systems, is an attempt to measure how much information is produced in the world each year.)
 4. In the United States, 164,609 new print or hard-copy titles were issued in 2003 (a 12% increase over 2002). R.R. Bowker, U.S. Book Production 1993–2004, available at <http://www.bookwire.com/bookwire/decadebookproduction.html> (last visited Jan. 24, 2005). According to the Open eBook Forum, the International Trade and Standards Organization for the eBook Industry, only 3614 e-books were published in the for-profit market in the first three quarters of 2003. Open eBook Forum Press Release, eBooks Get Serious: Sales Expected to Top \$10 Million in 2003, Unit Sales Grow 40% Over 2002 (Sept. 16, 2003), available at <http://www.openebook.org/pressroom/pressreleases/stats.htm>.
 5. Penny A. Hazelton, *How Much of Your Print Collection is Really on Westlaw or Lexis-Nexis?* LEGAL REFERENCE SERVICES Q., 1999, no. 1, at 3, 9.
 6. At the time of this writing, Westlaw has announced that docket information may be incorporated into the base academic contract in 2005. E-mail from Stefanie Efrati, Academic Account Manager, West, a Thomson Company, to Michelle M. Wu, Director of the Law Library and Associate Professor of Law, Deane Law Library, Hofstra University (Jan. 13, 2005) (on file with the author). LexisNexis currently provides limited docket information through a sister product, CourtLink, but additional charges accrue with full access.

titles incorporated into the other offerings. Therefore, what appears as just another Westlaw or LexisNexis database is, in fact, an expensive extra acquisition.

¶10 Of course, it must be acknowledged that print resources are also costly, and administrators may ask why expense is a differentiating factor in format selection. The answer is twofold. First, with tangible objects, there is rarely an assumption that no cost was attached to its acquisition. The “free” assumption in e-resource access originates from the intangible nature of electronic information. Second, the discussion later on licensing will illustrate why pricing for online resources may have a greater impact on libraries and their patrons than pricing for physical formats.

Materials Online Are Not Always Accurate or Authenticated

¶11 Studies have cited the growing reliance on Internet research by the public for widely ranging issues from health to current awareness.⁷ For an academic library, though, in which patrons require authoritative data to support arguments, instruction, or scholarship, the greatest strength of the Internet also becomes one of its dominant liabilities. Anyone with a computer and the necessary rights to a Web server can post or alter data. This greatly increases accessibility and availability of information on a limitless range of topics, but it also means that anyone with such access can edit documents and disseminate false information, actions that cannot necessarily be detected by the user. There is no guarantee of the poster’s authority or of the authenticity of a document. Some assurance and security derives from a reputable site or designated domain (e.g., .gov or .edu), but even in such cases, the review process for documents posted is not always apparent or consistent. Unlike most printed resources (except vanity publications), many free online ones are not routinely reviewed, edited, or checked for accuracy prior to or after publication. Even fee-based e-resources may inaccurately report content information, from titles or dates included to currency.⁸

¶12 Print materials are also subject to mutilation or defacement, but in such instances the original text itself is unchanged; only the copy that the individual library holds is damaged. With e-resources, the source document can be modified as easily as any copy, without indication as to when the change was made, who authorized it, and what motivated the alteration. Destruction of print materials results in the removal of an individual volume from a collection; destruction of an e-resource corrupts the source document, making verification or retrieval of the document by later generations impossible.

¶13 From the academic and legal perspectives, this unreliability fostered an early distrust of the e-document by courts,⁹ scholars,¹⁰ and tenure review

7. See e.g., DEBORAH FALLOWS & PEW INTERNET, *THE INTERNET AND DAILY LIFE* 4 (Aug. 11, 2004), available at http://www.pewinternet.org/pdfs/PIP_Internet_and_Daily_Life.pdf.

8. Laurie A. Preston & Corinne M. Ebbs, “Full-Text” Access Evaluation: Are We Getting the Real Thing? 34 SERIALS LIBR. 301, 302–03 (1998).

9. Claire M. Germain, *Digital Legal Information: Ensuring Access to the “Official” Word of the Law*, CORNELL L. FORUM, July 1999, at 11, 11–12.

10. Wendy Duff et al., *Historians’ Use of Archival Sources: Promises and Pitfalls of the Digital Age*, PUB. HISTORIAN, Spring 2004, at 7, 20.

committees,¹¹ which in turn contributed to the dependence on and expansion of print publications. Acceptance has since grown in both arenas; court opinions increasingly refer to Web sources,¹² and tenure review committees will consider reputable online journal articles when accompanied by proof of stringent peer-review.¹³ E-books/monographs, however, have not been embraced by the scholarly publisher,¹⁴ and in this area, the printed text remains the standard.

Stability

¶14 Having endured centuries of societal and mechanical meddling, the manner and result of physical printing is firmly established. Few uncertainties surround the printing or acquisition processes, user control of the printed form, or the standards to be used in publishing. In contrast, the transitory nature of technology renders access to digital documents unpredictable.

¶15 First, all sites, including fee-based ones, support the addition and removal of information without the consent of its users. While such freedom is necessary to keep information up-to-date, it also facilitates the unannounced removal of useful documents. Second, courts and legislators are still struggling to answer the challenges, particularly in intellectual property law, raised by online data. In their decision making, they can alter users' current and future rights with respect to digital information. Third, no set standards are uniformly accepted and applied to e-documents. Without standardization, multiple proprietary and open access formats are created, supported, and distributed to users. As technology marches forward, the lack of a standard will make transitions to new formats burdensome and will likewise impact accessibility.

Permanence and Completeness

¶16 Many electronic documents are fleeting, ephemeral. They can disappear entirely or suffer from the lesser defect of link rot. They may be removed from databases by the publisher for reasons ranging from desire to keep the database current, to disinterest in maintaining a low-use resource, to fear of litigation over

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11. Hak Joon Kim, *The Transition from Paper to Electronic Journals: Key Factors That Affect Scholars' Acceptance of Electronic Journals*, SERIALS LIBR., 2001, no. 1, at 31, 41–42.
 12. In New York state courts, opinions have cited more than 103 Web sites since 1998. See Ken Strutin, *Written on the Wind: Be Cautious When Citing Internet Sites in Legal Documents*, N.Y.L.J., June 29, 2004, at 5. Also, a search in Westlaw's ALLFEDS database reveals that between 1996 and 2003, the number of citation to online sources in reported federal cases increased from 11 to 879 a year.
 13. A survey of deans in Florida's higher education institutions reports that 67% support e-publication inclusion in tenure and promotion, though the burden of proving the journal's worth would be on the applicant. See Aldrin E. Sweeney, *Should You Publish in Electronic Journals?* 6 J. ELECTRONIC PUBLISHING (Dec. 2000), at <http://www.press.umich.edu/jep/06-02/sweeney.html>. Another study shows that while few departments have formal policies regarding e-publications in the promotion assessment, more than a quarter of the respondents have an increasing respect for this type of alternative publication. See Leigh Estabrook, *The Book as the Gold Standard for Tenure and Promotion in the Humanistic Disciplines*, at <http://lrc.lis.uiuc.edu/reports/CICBook.html> (last visited Jan. 11, 2005).
 14. See Justin Ewers, *Publish or Perish*, U.S. NEWS & WORLD REP., Apr. 12, 2004, at 52 (indicating that publishers, particularly university presses, think that e-solutions are not yet mature).

database copyright issues, to objections of a political nature.¹⁵ Alternatively, electronic publications may cease to be updated or may move without notice.¹⁶

¶17 This unpredictability increases when the data provider differs from the original publisher. Not only does continued access to the resource depend on a contractual arrangement between the publisher and the provider, but the provider also has the right to selectively post the information licensed. Such alteration manifests itself in a variety of forms, including the exclusion of charts and pictures, selective publication of articles, and incorrectly described scope notes.¹⁷

¶18 Particularly vulnerable to loss are interim documents, which are essential to legal research and analysis. Statutes, regulations, restatements, model laws, and many other essential legal documents go through numerous drafting stages, resulting in working documents and recorded deliberations. In law, examining these successive versions is often critical to understanding a policy's evolution. Since the perpetual publication of these materials may not be of economic interest to a publisher, documents may be made available for only a limited period.

¶19 If the drafts are published in print, libraries can obtain them immediately through purchase or later through interlibrary loan. When drafts are born digital, however, publisher disinterest or desire to provide only the most current information may compel it to overwrite the draft document(s). Only a few publishers, like GPO Access, consciously and actively preserve electronic records of deliberations and drafts. Uncertainties over the preservation of such electronic drafts often lead libraries and users to print out important documents for future use, and such printing results in later questions about authenticity and validity.¹⁸

15. Marylaine Block, *Beware the E-vanishing Act*, LIBR. J., Dec. 2003, at 81, 81.

16. In one study of scientific literature, it was found that the half-life of Internet postings averaged fifty-five months. Though the study did not include legal information, it does demonstrate the instability of Internet resources in science education, an established and respected field. See John Markwell & David W. Brooks, Broken Links: Just How Rapidly Do Science Education Hyperlinks Go Extinct? at http://www-class.unl.edu/biochem/url/broken_links.html (last updated Nov. 23, 2004); see also Mary F. Casserly & James E. Bird, *Web Citation Availability: Analysis and Implications for Scholarship*, 64 C. & RES. LIBR. 300 (2003); Philip M. Davis, *Effect of the Web on Undergraduate Citation Behavior: Guiding Student Scholarship in a Networked Age*, 3 PORTAL: LIBR. & ACAD. 41 (2003). In a much less scientific or thorough study of online citations found in legal periodicals, this author extracted citations from Westlaw's JLR database and submitted them to a robotic link checker for verification. Of the 268 such citations found in articles with a 1995 date, only 118 (44%) were verifiable in 2004. The same analysis was conducted on the 1485 citations in 1996, with a 48% success rate.

17. Carolyn Henebry et al., *Before You Cancel the Paper, Beware*, 42 SERIALS LIBR. 267, 271 (2002); see also Nancy Sprague & Mary Beth Chambers, *Full-Text Databases and the Journal Cancellation Process: A Case Study*, SERIALS REV., Oct. 2000, at 19; Preston & Epps, *supra* note 8, at 303 (citation omitted) ("Preston and Ebbs concluded that nothing is consistent in full-text except inconsistency and the journal titles. Only nine of the seventy-five titles had an equal number of items covered in both the print and electronic format of the journals. . . .Whereas the editor decides what is included in the print version, the vendor or publisher makes that decision for electronic full-access.").

18. Authentication, provenance, and other related issues have been listed as concerns by academics and courts. See Duff, *supra* note 10, at 20; Strutin, *supra* note 12; Ken Strutin, "Voodoo" Information? Authenticity is Key When Considering Web Content as Evidence, 124 N.Y.L.J. 5 (Oct. 12, 2004) ("[T]he fluid nature of Internet content and the increase in electronic archiving raise new issues, such as whether to request preservation of a Web page at the start of litigation or seek a protective order prohibiting resort to the Internet.").

¶20 Printed materials carry a greater guarantee of permanence. While it is possible for print materials to be retracted, wholesale removal of materials that are already printed, distributed, or both is difficult to effect. Recent attempts, such as the 2004 recall issued by the Depository Library Program for selected forfeiture publications, have been successfully rebuffed by libraries.¹⁹ In comparison, removal of a document published only electronically may be effectuated without user intervention, and therefore cannot be anticipated or challenged prior to deletion.

Changing Laws or Interpretations

¶21 The Internet, and digital information more generally, are developing technologies that are, as yet, barely regulated by federal and state laws. The application of existing doctrine, such as copyright and trademark law, to Internet and electronic resources has been imperfect, as the complications heralded by digital transmission were not anticipated by legislators at the time of enactment. Therefore, the contents of databases and Web sites may well be significantly affected by attempts at regulation, changes in legal interpretation, or both.

¶22 For one example of how information, or access to it, can fall victim to legal stratagems, libraries need only look to *New York Times Co. v. Tasini*.²⁰ Prior to the Supreme Court's decision in *Tasini*, the New York Times, and other information providers, sold electronic versions of their publications, including articles by freelance writers, to vendors such as LexisNexis and Westlaw, much as they would have sold the printed versions to microfilming services. LexisNexis and Westlaw then included the documents in their database subscriptions. Some libraries, relying on the long stability of these databases, cancelled their print subscriptions to the print or microform equivalent of the titles available through the information providers' products.

¶23 The Court found that the New York Times and the other information providers had violated the nonemployee authors' copyright in their articles, which were not included in the collective work copyright that the publishers owned. The decision hinged on the individual article retrieval capability unique to e-formats, as this permitted an article to be viewed outside its original context. Following the decision, the New York Times and other information providers purged their databases of the documents in question, and both users and libraries found formerly complete electronic archives filled with unpredicted gaps.²¹ Had the libraries retained the print or microform equivalent, their collections would have remained intact, even after the rendering of the decision.

¶24 Today, most publishers have carefully assembled their databases and drafted their contracts with future technology clauses to protect against this kind

19. *Recalled Government Papers Prompt Librarian Protest, Then Reversal*, LIBR. J., Sept. 1, 2004, at 15.

20. 533 U.S. 483 (2001).

21. Scott Carlson, *Once-Trustworthy Newspaper Databases Have Become Unreliable and Frustrating: Supreme Court Decision Led Publishers to Purge Much Archival Material to the Dismay of Scholars*, CHRON. HIGHER EDUC., Jan. 25, 2002, at 29.

of legal challenge. However, the Internet is a fluid entity, digital information is a relatively new format, and courts are still struggling to apply existing law to an ever-changing medium. Legislation revolving around digital data, its use, and exploitation is on the rise. In the 108th Congress alone, more than thirty bills were proposed to amend or enact new copyright laws to govern electronic resources. Most of these had a stated intention of prohibiting copyright abuses, but were worded in such a manner as to expand restrictions to lawful actions as well. Past Congresses have already limited access to digital information through measures such as the Digital Millennium Copyright Act,²² a statute that was strongly opposed by many information user groups for reasons ranging from loss of privacy to concern about technology overriding traditional copyright protections.

¶25 Laws governing printed text are more secure, as many years of litigation and interpretation have led to stability in application, although certain rights may still be altered. For example, copyrights have been legislatively extended.²³ Typically, though, once data is recorded on a physical format, the modification of existing laws impact only the future use of the text, not the present.

Changing Standards and Preservation

¶26 “Changes in computing technology will insure that, over relatively short timeframes, both the media and the technical format of old digital materials will become unusable. Keeping digital resources accessible for use by future generations will require conscious effort and continual investment.”²⁴

¶27 Unlike print, electronic documents are not immediately readable by the naked human eye. The ability to access them is dependent on equipment and technology, both of which become important considerations when examining the acquisition of information stored in electronic form. Vinyl records, 8-track tapes, betamax cartridges, and 5-1/4-inch floppy disks have aptly demonstrated that reliance on any one technology, especially intermediate ones, portends significant future expenditures. To keep the data on such formats accessible, information must be migrated to new formats. Barely ten years have passed since the World Wide Web, as currently known, came into being. In that time, there have been multiple changes in “markup languages” (e.g., HTML, XML) used to prepare documents for Web publication and in information format choices (e.g., JPEG, TIFF, PDF). In evaluating a resource, libraries must consider whether the data is of permanent or

22. Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.). For further discussion of the DMCA, see ASS'N OF RESEARCH LIBRARIES, DIGITAL MILLENNIUM COPYRIGHT ACT STATUS AND ANALYSIS, at <http://www.arl.org/info/frn/copy/dmca.html> (last modified Oct. 29, 2004).

23. As one example, see the Sonny Bono Copyright Term Extension Act, Pub. L. No. 105-298, 112 Stat. 2827 (1998) (codified as amended at 17 U.S.C. §§ 108, 203, 301–04 (2000 & Supp. II 2002)).

24. Dale Flecker, *Preserving Scholarly E-Journals*, 7 D-LIB MAG. (Sept. 2001), at <http://www.dlib.org/dlib/september01/flecker/09flecker.html>.

only temporary value to the collection; if permanent, it must factor in future costs for migration or preservation.

¶28 Print texts have lifespans counted by centuries, determined by paper quality and the elements that touch it, and extended by the application of ANSI/NISO standards and preservation techniques. E-documents' lives are briefer, due in part to the absence of set standards in digital production.²⁵ According to the National Archives, the United States federal government alone uses at least 4800 different formats for electronic records;²⁶ others place the number at 16,000.²⁷ Conversion or preservation of these documents presents a staggering obstacle for the government and other e-document providers, while continued access to physical materials is not similarly questioned.

Ownership Versus Licensing

¶29 Licensing brings with it a host of complicated issues, which will be addressed only briefly here.²⁸

¶30 Once purchased, print materials belong to a library, which then has access to the material in perpetuity. On the other side of the spectrum, many electronic products are licensed. A library has access to licensed contents only so long as it maintains and pays for a subscription. This distinction plays a significant role in the analysis of the long-term value of a resource to a library.

¶31 Use of a book is governed by copyright. Rights to photocopy materials, to place them on reserve in the library, and to use them in classrooms, for research, and in other ways are well understood under federal copyright law. Use of a licensed database is governed by contract, however, and can contain terms that limit or even override typical copyright protection. One common example is a license provision that prohibits the use of a database for interlibrary loan. While the print equivalent, under existing copyright law, could be used in interlibrary lending, the electronic version would be unavailable for such purposes. Every vendor of electronic information has different licensing terms, and frequently the same vendor has different terms for its various publications. The resulting rights of any given library depend on the terms of the contract and the skills of its negotiator, not on established copyright laws and practices.

¶32 Another aspect of licenses to scrutinize is the continuing availability of materials, or the lack thereof. Licenses, by definition, provide merely temporary

25. Germain, *supra* note 9, at 11.

26. Lee Davidson, *Will Data Stand the Test of Time?* DESERET MORNING NEWS, Dec. 29, 2003, at B1.

27. Karen Robb, *Vanishing Records: The \$500 Million Race to Save Digital Data*, FED. TIMES, Aug. 9, 2004, at 1.

28. For a more in-depth discussion of licensing, see LibLicense: Licensing Digital Information, A Resource for Librarians, at <http://www.library.yale.edu/~llicense/index.shtml> (last visited Jan. 14, 2005); PATRICIA BRENNAN ET AL., STRATEGIC AND PRACTICAL CONSIDERATIONS FOR SIGNING ELECTRONIC INFORMATION DELIVERY AGREEMENTS, at <http://www.arl.org/scomm/licensing/licbooklet.html> (last modified June 23, 2002).

access.²⁹ Each year, a library purchases access to a database, even if the new, current information added each year is only a very small subset of the entire database. The library pays for access to “old” as well as “new” information each billing cycle and, consequently, failure to pay for a license in any single year results in the loss of not only the current data, but also the archives of previous years. Absent express agreement in the license by the vendor, libraries can lose access to many years’ worth of electronic resources, including periodical subscriptions, newsletters, newspapers, and supplements, when a license is not renewed.

¶33 Termination of a print subscription impacts only new information and, thus, a print collection protects the rights of users-to-be. Neither budget reductions nor price increases have the force to dismantle a physical library. Materials already purchased remain available and accessible to all users. Digital libraries relying on licenses provide no such surety and are subject to budgetary strictures and publisher whims.

Splintering of Databases

¶34 Ten years ago, e-publishing required a tremendous investment of resources and expertise not readily available. Small companies, therefore, leased their products to high-scale data providers like LexisNexis and Westlaw for the monies it brought them and for a distribution outlet. Today, however, the ease of e-publishing makes it economically feasible for those who once leased their information to large data brokers to construct, mount, and independently charge for their own services. Concurrently, they terminate their contracts with their former data brokers. Law libraries are affected more by this phenomenon than other academic libraries for two reasons.

¶35 First, long before Web delivery of data became popularized, law libraries had LexisNexis and Westlaw. For an extended period of time, both of these systems were stable, adding new services without significant loss of data. Reliance on the databases for research grew as students, faculty, and staff were systematically exposed to the convenience of online searching across multiple sources of information. Recently, though, smaller vendors have launched their own e-services and, simultaneously, removed data from these two aggregator databases.³⁰ Law libraries, which had long relied upon the steady pricing and stable databases of LexisNexis and Westlaw, were suddenly faced with substantial bills for electronic resources that were previously available at no additional charge.

¶36 Second, rapid legal publisher consolidation has accelerated the removal of licensed data from long-time hosts. One example is the disappearance of Shepard’s

29. Recent developments in e-resources have introduced the concept of “perpetual” licenses, which typically have lower ongoing costs. Unlike standard licenses, which require full payment each year, a perpetual license relies on a substantial initial investment, followed by a modest annual fee in subsequent years. However, in substance, these instruments are still licenses; failure to pay the nominal continuing fee results in forfeiture of the entire database.

30. For instance, the Bureau of National Affairs removed content from base LexisNexis and Westlaw academic contracts and introduced a self-supported e-service in 2002.

from Westlaw, which happened when Shepard's was acquired by LexisNexis and became an exclusive Lexis service. While that particular move spurred the development of another citator service (KeyCite), improving the options for researchers, overall, legal publisher consolidation has lessened competition. As these mini-monopolies develop in legal publishing, the prices of both print and online materials have skyrocketed.³¹ The combination of licensing (i.e., nonownership) and monopolization can be extraordinarily detrimental to the library budget, as unpredictable spikes in prices result in cancellations of databases with current and retrospective coverage.

*Archiving*³²

The problem of preserving digital information cannot be solved definitively, at least not as long as information and communication technologies continue to change, because such change alters the character of the problem.³³

¶37 The printed word, once printed, is fixed and unchangeable. The content of a book is archived as soon as the book is printed, since it is a stable, self-preserving format that endures for centuries. In contrast, electronic documents are not self-perpetuating. Unless contents are actively backed up, consistently converted to current technologies, or both, an e-resource may not be accessible by tomorrow's user.³⁴ Until standards are reached on issues such as archival responsibility and methodology and format preservation, electronic-only collections jeopardize a library's long-term obligations to build and maintain a usable collection.

¶38 Further, Web sites and information stored thereon change constantly. Even if standards on archiving and preservation are universally adopted on specific Web-based documents or databases, much of the information previously published on the Web, including most of that available today, will not be saved.³⁵ A news article on a single site can change multiple times in a day. Electronic modifications are not easily identifiable, and patrons seeking to find a particular version of a document may be unable to do so. Though ventures like the Wayback Machine

31. "During the period from 1973 to 1996, for example, when the Consumer Price Index showed an increase of 253%, the average cost of legal serials rose 495%. . . . In the past four years alone, the prices of legal continuations rose nearly 72%. . . ." KENDALL F. SVENGALIS, *LEGAL INFORMATION BUYER'S GUIDE & REFERENCE MANUAL* 15 (2003).

32. For the purposes of this subsection, archiving refers to saving data in any format, and preservation refers to saving the original, physical format.

33. Kenneth Thibodeau, *NARA's Electronic Records Archives Program*, 96 *LAW LIBR. J.* 633, 642, 2004 *LAW LIBR. J.* 43, ¶ 29.

34. Kevin M. Guthrie, *Challenges and Opportunities Presented by Archiving in the Electronic Era*, 1 *PORTAL: LIBR. & ACAD.* 121, 122 (2001).

35. Scholarly materials outside of print publications have not been routinely saved. See Richard A. Danner, *Issues in the Preservation of Born-digital Scholarly Communications in Law*, 96 *LAW LIBR. J.* 591, 601, 2004 *LAW LIBR. J.* 38, ¶ 21. Other materials generally posted on the Web are equally unprotected from loss. See Richard Poynder, *Elephants and Dung Trucks*, *INFO. TODAY*, Sept. 2003, at 33, 34.

(www.archive.org/web/web.php) are archiving selective free pages and materials, they cannot save every version of every page on the Web. They are also unable to access fee-based resources, thus leaving extraordinary amounts of valuable information to disappear without a trace. The digital format should be hardier than print, since it does not degrade over time. Ironically, due to its incidental needs, digital documents are being archived in the more reliable physical format (print or microform).³⁶

Ease of Use

¶39 The evolution of e-documents has just begun, as is most evident for the struggling e-book reader. While reference materials, indexes, and news clips lend themselves well to the digital medium, studies have shown that technology has not been able to replicate the ease of book reading.³⁷ Over the ages, print publishers have optimized font and appearance for readers, and any reduction in this ease is resisted. Also, readers have learned to recognize a book's chapters in relation to each other. In a printed text, they can easily find a particular reference by this tactile and cognitive association. A data file, which is without physical form, cannot support that same type of reference. A new manner of association will develop as the e-book matures, but its present format is not yet ideal (or even very useful) for legal research, which relies heavily on such associations.

¶40 The dissatisfactions with lengthy digital documents vary from unfamiliarity to difficulty of use. Though e-books have made great strides, moving away from requiring specific reading devices or employing exclusive use technology, readers continue to express a preference for the printed text when any amount of extended reading is necessary.³⁸ One recent example is the 9/11 Commission Report. Though posted immediately on the Internet, readers purchased enough hard copies to make the title a national bestseller for more than nine weeks.

Exactness and Filtering

The Internet is free and fair, open and accessible, personal, postmodern, empowering. That old-fashioned phrase, 'the world is my oyster,' is embodied on the Internet. But oyster divers can drown—too much water, too deep, bad currents.³⁹

36. Florence Olsen, *Digital Archiving: Ensuring Storage Space and Access*, CHRON. HIGHER EDUC., Jan. 30, 2004, at 14.

37. *See Technology of E-Books Needs Work Before Students Will Accept Them, Study Finds*, CHRON. HIGHER EDUC., Sept. 13, 2002, at 33; *Rich Offerings: E-publishing Growth Areas*, LIBR. TECH. REP., Nov.–Dec. 2004, at 7; Barry Fast, *Books in the Digital World*, 22 LIBR. COLLECTIONS, ACQUISITIONS & TECHNICAL SERVICES 163 (1999); Edward Shreeves, *The Acquisitions Culture Wars*, 48 LIBR. TRENDS 877 (2000).

38. FALLOWS & PEW INTERNET, *supra* note 7, at 10; *see also* Walt Crawford, *Paper Persists: Why Physical Library Collections Still Matter*, ONLINE, Jan.–Feb. 1998, at 42, 44 (contending that anything more than five hundred words is typically printed and read offline); Juris Dilevko & Lisa Gottlieb, *Print Sources in an Electronic Age: A Vital Part of the Research Process for Undergraduate Students*, 28 J. ACAD. LIBRARIANSHIP 381, 387 (2002) (presenting a survey that shows 57.1% of undergraduates prefer print over electronic versions of books).

39. Fast, *supra* note 37, at 164.

¶41 For years, people have averred that the Web's limitless capacity for information storage would displace the printed text. Even as users found more information available to them, though, they found that endless and unfiltered data complicated research by overwhelming them with irrelevant hits or requiring them to acquire resource-specific search strategies.⁴⁰ In this analysis, the value of print has only been elevated.

¶42 Due to the expense of editing, publishing, and distributing books, printed materials are thoroughly vetted. Manuscript submissions are reviewed for accuracy, uniqueness, and readability.⁴¹ Therefore, a user who picks up a printed text in the library has the assurance that some evaluation of the resource's worth has already occurred, both by the publisher and by the library's selectors.

¶43 Online, even where relevance ranking is available, the worth of a document and the elements used in determining worth are not always easily discernable. Free resources are particularly troublesome in this regard. Engines may allocate greater weight to their advertisers' sites,⁴² relevance may depend on metatags or other self-reported information by site owners, and results may depend on the intentions of other searchers, as in the case of popularity-determined search engines. The Web is not designed to be exact; not all pages are searchable by the usual engines and not all pages are equal.

¶44 Equally important, few users realize that most search engines index less than 10% of the Web.⁴³ Only the static pages are easily searched, while the dynamic ones (e.g., directories) are frequently excluded. Search engine users may mistakenly believe that they have searched all Web-posted data when, in fact, they have only scoured a small percentage of it.⁴⁴ Even with fee-based resources, which contain edited information and have strictly defined search structures, a user must be aware of the structure in order to search efficiently.⁴⁵ Therefore, not only does online searching proffer documents of questionable worth, but their limited capabilities and the nondisclosure of engine biases may mislead users in resource evaluation.

40. David S. Zeidberg, *The Archival View of Technology: Resources for the Scholar of the Future*, 47 LIBR. TRENDS 768, 802 (1999); see also Amanda Spink, *Web Search: Emerging Patterns*, 52 LIBR. TRENDS 299 (2003); FALLOWS & PEW INTERNET, *supra* note 7, at 13; Bruce Garrison, *How Newspaper Reporters Use the Web to Gather News*, NEWSPAPER RES. J., Summer 2003, at 62, 64.

41. Thomas Mann, *The Importance of Books, Free Access, and Libraries as Places—and the Dangerous Inadequacy of the Information Science Paradigm*, 27 J. ACAD. LIBRARIANSHIP 268, 272 (2001).

42. JØRGEN J. WOUTERS, *SEARCHING FOR DISCLOSURE: HOW SEARCH ENGINES ALERT CONSUMERS TO THE PRESENCE OF ADVERTISING IN SEARCH RESULTS* 4, 6 (Nov. 8, 2004), at <http://www.consumerwebwatch.org/news/paidsearch/finalreport.pdf>.

43. Though exact estimates vary, the most frequently cited source claims that the deep Web contains 400 to 550 times the information of the surface Web. Michael K. Bergman, *The Deep Web: Surfacing Hidden Value*, 7 J. ELECTRONIC PUBLISHING (Aug. 2001), at <http://www.press.umich.edu/jep/07-01/bergman.html>.

44. Brad Stone, *Little Engines that Can*, NEWSWEEK, Mar. 29, 2004, at 59.

45. David S. Byrne, *Keep It Fast and Cheap; Welcome to the Real World, Where Online Research Can Cost—a Lot!* N.Y.L.J. MAG., June 1, 2004, at 36, 37.

Instruction

¶45 Not all employers of law school graduates will have access to online sources. Even those that do may restrict access, circumscribing researchers' dependence on them. Further, practitioners have always relied on academic libraries to provide less frequently needed or esoteric documents; now, as their costs of business increase, they are also downsizing their basic print collections and turning more to local law libraries to meet their information needs. Law libraries, therefore, must keep their physical collections to ensure that their students have training in, and access to, all types of legal information formats.

Summary

¶46 Print formats presently deliver a benefit that their digital brethren cannot—reliability and definition. Technology, still in its infancy, has not yet mastered the arts of preservation and quality control. Legal and technological standards have not yet been developed or are currently only in the incubation stage. Finally, publishers of e-materials continue to adjust price formulas and delivery methods as they test their footing in the digital world. However, despite these uncertainties with the burgeoning format, libraries must acknowledge that technology has permanently transformed the research landscape and altered the perception of print value.

Why Is Technology Important?

¶47 Technology permeates everyday life, from e-mail to remote database access to computers in our cars, microwave ovens, and cell phones. In terms of information, technology presents many important benefits to the researcher and to libraries, from remote access to full-text searching. The amount of information—the good, the bad, and the ugly (!)—being produced electronically grows exponentially each year. One estimate of current production comes from a 2003 Berkeley study, noting that five exabytes⁴⁶ of information was generated in 2002 alone, 92% of which was stored electronically.⁴⁷ As digital resources have grown, law firms predictably have moved increasingly toward digital libraries, and they expect new clerks, associates, and partners to be comfortable in such an environment.⁴⁸ As educators

46. "How big is five exabytes? If digitized, the nineteen million books and other print collections in the Library of Congress would contain about ten terabytes of information; five exabytes of information is equivalent in size to the information contained in half a million new libraries the size of the Library of Congress print collections." LYMAN & VARIAN, *supra* note 3.

47. *Id.*

48. "[L]awyers' use of online legal research is competing directly with print. The respondents to the ABA's 2002 Legal Technology Survey reported that 37% (mean) of the time they used fee-based online legal services while 34% of the time they used print." Catherine Sanders Reach et al., *Feasibility and Viability of the Digital Library in a Private Law Firm*, 95 LAW LIBR. J. 369, 374, 2003 LAW LIBR. J. 26, ¶ 15.

of these future practitioners, academic law libraries must provide and instruct students on the e-resources that they will need in practice.

¶48 Equally important, libraries must respond to the critical question of value. The first part of this article paid tribute to print publications and the objective value that they provide to libraries and users, yet the subjective value to a given community may be measured on a different scale. Print unquestionably preserves information for future generations, but if libraries do not master and understand the media that their users prefer, the current generation may devalue the library to the point where it does not survive to serve future users. Therefore, the remainder of this article will explain how the support of digital formats furthers an academic law library's basic mission by expanding research in ways that physical formats cannot accommodate.

Currency

¶49 Technology enables the rapid updating of information, a feature highly valued by faculty, students, and practitioners looking to evaluate the validity of their assertions against new court decisions, legislation, and scholarship. Print publishing requires gathering, assembling, printing, and distribution, the latter two steps of which also require physical delivery to the subscribing institutions. Online databases eliminate the delay in delivery and allow information to be posted online even as it is created.

¶50 Shepard's and Keycite illustrate the beauty and appropriateness of such electronic delivery. They are resources designed to advise the practitioner of recent rulings or legislation affecting his or her case or statute. Using the online version instead of the print volumes saves researchers both time and effort; the print version often necessitates consulting three or more different books or supplements and is still weeks if not months out of date. The online citators are updated daily, and all information is incorporated into a single display. Some lawyers have even suggested that as professional standards evolve, use of an online citator may become required.⁴⁹

¶51 The immediate publication of information can be further leveraged to a researcher's advantage through clipping or current awareness services. Paper newsletters or newspapers serve the same stated purpose, but the digital medium not only accelerates transfer but also invites user customization. Information can be crafted for individuals based on their current needs and interests. Print newsletters can specialize in topics, but they cannot offer the granular control of e-resources.

¶52 With the power of electronic transmission in mind, it is still necessary to note that delays in online delivery are not uncommon.⁵⁰ These delays are typically

49. Simon Chester, *Electronic Malpractice: Does Reasonable Competence Require Computer Research?* LAW PRAC. MGMT., Nov-Dec. 1991, at 23, 24-25; Brian Ribble-Smith & Arthur W. Haffner, *The Effect of the Information Age on Physicians' Professional Liability*, 36 DEPAUL L. REV. 69, 93 (1986).

50. In one study, 45% of journals lagged behind print equivalents. Sprague & Chambers, *supra* note 17, at 25. In legal materials, the *New York Law Journal* serves as an example; its online versions—as provided by law.com, LexisNexis, and Westlaw—are selective and frequently posted after the print issue is distributed.

engineered by the publisher, either to preserve its print subscription numbers or to honor a previously established license agreement with another provider. Although only an artificial mechanism, this factor must be taken into account when using online resources.

Print Materials Are Limited and Exclusive in Use

¶53 Print texts, being physical entities, restrict use of any given volume to a single user at any given time. Digital information can be replicated innumerable times and simultaneously dispersed to recipients worldwide; electronic documents are not exhausted by use. Therefore, digital transmission avoids certain pitfalls attached to the distribution of printed texts, including limited print runs or understocking. While bandwidth and level of demand can reduce the speed of transmission, the document itself does not deteriorate or depend on outside production.

Convenience

¶54 Technology has transformed libraries and the manner in which they provide their services. Proxy servers and virtual private networks allow users to connect to library resources remotely; hyperlinking in integrated library systems publicizes the location of resources, regardless of format; electronic journal management programs like TDNet can combine or divide aggregator databases to facilitate searching; adaptive hardware and software, such as voice recognition software, enable disabled patrons to “read” resources without requiring the library to provide a human reader or interpreter. Technology expands a library’s collection to beyond just purchases or licenses, dissolves the physical boundaries of the library, and permits its users to access resources independent of location.⁵¹

¶55 Some traditional reference sources—dictionaries and indexes, for example—gain tremendous utility with online dissemination, as they are more easily manipulated in database format. Even researchers with the greatest preference for print resources—historians—recognize the value of online indexes in locating citations to original documents.⁵² Print indexes are linear and, even with cross-references, support only basic search strings. An online database magnifies indexing through features such as Boolean searching, nested queries, limiting executed searches, and direct linking to full-text documents. Incidental features such as highlighting, saving searches, interfaces with external software packages, and printing options also contribute to the user’s comfort and convenience.

¶56 Technology has also reduced the average amount of time used to research, both in terms of the time to travel to remote resource repositories and the time spent with the research materials themselves. Based on the habits of experienced corporate information users, one study contends that the time spent

51. *Id.* at 19.

52. Duff, *supra* note 10, at 14.

on researching and analysis has dropped as much as 25% with the introduction of online data sources.⁵³

Portability

¶57 A book, or any physical container, occupies space. Data too require a home, but the scale on which space is needed is minuscule compared to physical formats. A physical library cannot be easily carried from one location to another, whereas devices such as handhelds, USB memory keys, and laptops envision an eminently portable virtual library. Even though the data may not be in the most easily used or preferred format, it is still accessible, transferable, and downloadable to multiple devices. The only limits derive from the device itself and its memory capacity.

Malleability

¶58 In law, precedent and legal authority weigh heavily in any researcher's argument and, therefore, any assertion must be adequately anchored to or differentiated from existing principles and theories. When referenced material is in electronic form, it can be easily massaged (as in the case of statistics) or exported into the researcher's work product. The need to take copious notes while reading, or to make photocopies of each referenced page, vanishes when a quotation and its source information can be "cut" directly from its electronic source and dropped into the citing author's text (with appropriate attribution).⁵⁴

Relational Mobility

¶59 A printed book or set of books is self-contained. When a book refers to another source, the user must locate the referenced item on a physical shelf. Electronic resources are not similarly constrained; they facilitate delivery of information, regardless of source, to the user. They can link to other databases or e-resources, and though the user's actual ability to access the document may depend on current subscriptions, technology enables seamless transition from one source to another. The user needs only to click on the hyperlink to view the cited document. Examples include RIA's tax library and the BNA newsletters, which contain references to other vendor publications as well as to outside resources such as GPO Access.

User Expectations

¶60 Considering all of the benefits listed above, it is not surprising that users have adapted to technology and demanded greater availability.⁵⁵ Those accustomed to

53. Roger Strouse, *The Changing Face of Content Users and the Impact on Information Providers*, ONLINE, Sept.–Oct. 2004, at 27, 31 (2004). While Strouse's article does not address the quality of the searches and the resulting data, the satisfaction of users with the information provided is clear.

54. The frequently neglected factor in this approach, and the one requiring frequent repetition, is that even though technology makes it easier to transfer or copy text, the use of data is still protected by copyright. Whether the documents are in print or online format, the same laws apply, and users should be respectful of them.

55. See generally Scott Carlson, *Students and Faculty Members Turn First to Online Library Materials, Study Finds*, CHRON. HIGHER EDUC., Oct. 18, 2002, at 37; Carol Tenopir, *What User Studies Tell Us*,

conducting research at odd hours or searching across multiple databases with a single query find print resources constraining. As established by Mann's Principle of Least Effort, "most researchers (even 'serious' scholars) will tend to choose easily available information sources, even when they are objectively of lower quality, and further, will tend to be satisfied with whatever can be found easily in preference to pursuing higher-quality sources whose use would require a greater expenditure of effort."⁵⁶ Specifically addressing electronic resources in relation to this principle, another study "suggests convenience is the driving force when deciding among information retrieval options, more specifically, ease of access and speed of delivery. . . . When confronted with the choice between pursuing an abstract or printing a full-text article, most undergraduates will choose the full-text article with little or no consideration of the journal's quality."⁵⁷

¶61 As social and economic factors have fostered transience, access independent of location has become a necessity. Faculty and students work at home, travel, and visit other institutions, and they have come to expect access regardless of their location. Despite the justified reservations over the longevity of e-databases, the fact remains that many, if not most, users now look first toward online access and second to physical formats when researching.⁵⁸ Statistics show that preference for digital delivery has increased by 37% since 2000;⁵⁹ patrons scorn delays for offline interlibrary loans and resist paying for online ones;⁶⁰ libraries have reported steadily decreasing numbers in visitors to the physical library;⁶¹ citations to print resources in research works are decreasing as well;⁶² some junior faculty embark on their academic careers believing that everything is indeed online; and longtime proponents for print resources make less use of them.⁶³ Realistically, libraries need to address these expectations while redirecting patrons to more appropriate materials when e-resources are deficient.

Not Everything Is in Print

¶62 Dual format publishing is on the rise, and born-digital documents already outnumber print ones. Even in the scholarly world, the number of resources published

LIBR. J., Sept. 1, 2003, at 32; AMY FRIEDLANDER & DIGITAL LIBRARY FED'N, DIMENSIONS AND USE OF THE SCHOLARLY INFORMATION ENVIRONMENT (2002), available at <http://www.diglib.org/pubs/scholinfor>; *Future of Digital Libraries*, 29 J. ACAD. LIBRARIANSHIP 276 (2003). One study claims that only 9% of college students use libraries more than the Internet for research. STEVE JONES & PEW INTERNET, INTERNET GOES TO COLLEGE: HOW STUDENTS ARE LIVING IN THE FUTURE WITH TODAY'S TECHNOLOGY 12 (Sept. 15, 2002), available at http://www.pewinternet.org/pdfs/PIP_College_Report.pdf.

56. THOMAS MANN, LIBRARY RESEARCH MODELS 91 (1993).

57. David J. Brier & Vickery Kaye Lebbin, *Evaluating Title Coverage of Full-Text Periodical Databases*, 25 J. ACAD. LIBRARIANSHIP 473, 475 (1999).

58. Dilevko & Gottlieb, *supra* note 38, at 390.

59. Strouse, *supra* note 53, at 29.

60. A. Craig Hawbaker & Cynthia K. Wagner, *Periodical Ownership Versus Full-text Online Access: A Cost-Benefit Analysis*, 22 J. ACAD. LIBRARIANSHIP 105, 108 (1996).

61. Davis, *supra* note 16, at 41 (citing significant decrease in reference statistics compiled by ARL between 1995 and 2001).

62. *Id.* at 42.

63. Henebry, *supra* note 17, at 270.

exclusively online is increasing. This growth was prompted by the rapid increase in publisher print pricing,⁶⁴ and propelled further by lower distribution costs,⁶⁵ technology's evolution, and user demand.

¶63 For legal researchers, numerous reviews and journals are already available online at no charge to the library,⁶⁶ and a significant amount of unique or free information is available only in digital format. The latter category includes docket information and records;⁶⁷ law reviews, journals,⁶⁸ and newspapers; scientific and technical reports and studies; government and legislative information;⁶⁹ and audio files.⁷⁰ Much of this information was previously inaccessible, or only accessible to those with the funds and time to travel to the designated repository.

¶64 Beyond traditional documents, scholars recognize that informal means can contribute to research and scholarship. Technology fosters rapid and frequent communication using mechanisms such as discussion lists and blogs, which in turn create an electronic record for later research or reference, with records available only in the electronic form.⁷¹

Lower Costs and Fewer Space Needs

¶65 In some cases, electronic databases are less expensive than books, and in almost all cases they require less space. At the most basic level of analysis, which is the cost of the resources themselves, a cursory examination of the titles provided by LexisNexis and Westlaw makes evident that the cost of purchasing every title represented by these aggregators would be far greater than the annual licensing fees charged academic law libraries. LexisNexis alone provides access to 36,000

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64. Lila Guterman, *The Promise and Peril of "Open Access,"* CHRON. HIGHER EDUC., Jan. 30, 2004.
 65. "Emphasis should be on streamlining the distribution of traditional paper copies of publications which may include providing online access and less expensive electronic formats." H. REP. NO. 106-796, at 46 (2000).
 66. It should be noted that in some cases, these open access journal publishers have transferred costs from libraries and end users to the authors.
 67. E.g., Admin. Office of the U.S. Courts, Public Access to Court Electronic Records (PACER), at www.pacer.uscourts.gov (last visited Jan. 12, 2005); Fla. State Univ. Coll. of Law Library, Florida Supreme Court Briefs and Opinions, at <http://www.law.fsu.edu/library/flsupct/index.html> (last visited Jan. 12, 2005).
 68. For example, *National Journal of Sexual Orientation Law* (ceased in 1998), *Richmond Journal of Law and Technology*, *Journal of Online Law*, *E-law: Murdoch Electronic Journal of Law*, and selected issues of the *Journal of Science and Technology Law*.
 69. Noel Jeffrey, *Uncle Sam Leveraging Ink on Paper and the Web*, PRINTING NEWS, Dec. 15, 2003, at 10. Also, the Government Printing Office (GPO) has announced that 50% of all federal government information is already born digital. United States Gov't Printing Office, News Release, GPO Proposes 21st Century Digital Information Factory (Dec. 13, 2004), available at <http://www.gpo.gov/news/2004/04news33.pdf>.
 70. E.g., Oyez, U.S. Supreme Court Multimedia, at www.oyez.org (last visited Jan. 12, 2005).
 71. See DEBORAH FALLOWS & LEE RAINIE & PEW INTERNET, THE INTERNET AS A UNIQUE NEWS SOURCE 1-2 (July 8, 2004), at http://www.pewinternet.org/pdfs/PIP_News_Images_July04.pdf (discussing the posting and accessing of graphic war images on the Web, particularly in instances where they were not carried by traditional news sources).

titles, and Westlaw, 15,000 to 16,000.⁷² For most academic law libraries, the total annual subscription costs of the National Reporter System alone would exceed the cost of either of these services.

¶66 Space analysis yields similar results. Even accounting for the area needed by machinery, the amount of floor space occupied by shelving for the same resource in print form is significantly greater. Where a publication has no historical research purpose and relies entirely on currency, an electronic product will save room and staff time, thus costing less than its print equivalent even if their purchase prices are the same.

¶67 Expanding consideration to indirect costs, collecting electronic resources reduces expenses associated with binding,⁷³ reshelving, processing, storage, and supplies (e.g., tattle tape, bar codes). One article posits that a library would save \$0.70 per subscription in storage and processing costs, while saving up to \$1.50 per each volume to be reshelved.⁷⁴ In libraries with severe staff shortages and high demand, electronic resources signify access that would otherwise be unavailable.⁷⁵

¶68 Other intangible benefits include the liberation of shelf space for materials that cannot be found in electronic format or that are not easily accessed in electronic format, and the value in knowing that e-resources cannot be misshelved or “lost” in the traditional print sense.

Accurate Use Assessment

¶69 Libraries through the ages have sought mechanisms through which to measure use. Academic law library collections, which are primarily noncirculating, pose particular challenges. While reshelving and circulation statistics can provide some data, they are not complete and therefore not entirely reliable. Even discounting the occasional, predictable user disregard for shelving instructions, reshelving statistics, at best, count the number of volumes used, not necessarily how much of the volume was used.

72. Information obtained directly from both vendors' telephone support lines. It should be noted that many of these titles are not traditional law titles and therefore would not typically be found in print in law library collections. For a more in-depth analysis of the actual comparative value of print versus online equivalents, see Hawbaker & Wagner, *supra* note 60, at 106 (noting that aggregators frequently select the most inexpensive titles for inclusion).

73. Iris W. Anderson, *To Bind or Not to Bind: Pros & Cons of Maintaining Paper Periodicals in the Library's Collection*, INFO. OUTLOOK, Nov. 1999, at 24; Lynn Silipigni Connaway & Stephen R. Lawrence, *Comparing Library Resource Allocations for the Paper and the Digital Library*, 9 D-LIB MAG. (Dec. 2003), at <http://dlib.org/dlib/december03/connaway/12connaway.html>, compares all indirect costs and finds that an all-digital library would require less labor, space, material resources, and equipment. However, the discussion did not address content quality or reliability.

74. John Cox, *Value for Money in Electronic Journals: A Survey of the Early Evidence and Some Preliminary Conclusions*, 29 SERIALS REV. 83, 84 (2003). The \$1.50 amount derives from both reshelving and photocopying costs. Absent from the analysis was cost-shifting from photocopying to printing.

75. Peter Boylan, *4 Prisons Install Legal Research Computers for Inmates*, HONOLULU ADVERTISER, Mar. 16, 2004, at 6B.

¶70 With e-resources, tracking is automated and can be analyzed generally (e.g., how many hits the database received) or specifically (e.g., which titles are most popular).⁷⁶ Therefore, actual use can be better measured, providing information for collection development, maintenance, and reduction analyses.⁷⁷ The most general statistics may be misleading, as they duplicate the defect found in print statistical analysis; they do not measure actual usefulness of each hit to the searcher. Even an accidental selection would result in a recorded hit. However, studies have shown that download statistics accurately reflect actual use.⁷⁸

Instruction

¶71 Even as print publishing expands, electronic resources are becoming more prominent in research. Students must be prepared to research in any format, and an academic law library is responsible for ensuring that the necessary skills are learned. Law firm research encompasses the use of both print and electronic resources,⁷⁹ and hiring partners have a reasonable expectation that new attorneys will be proficient in both. Even smaller firms or partnerships now boast of some electronic access as both LexisNexis and Westlaw have produced online products tailored to the needs of each type of law practice. A survey of legal publishers reported that "Internet publications (are) making up about a third of total production and CD-ROM, 15%."⁸⁰ Law firms focus not only on online research but on effective online research, which in some cases can only be developed through use and ongoing training. To this end, libraries function both as training grounds and as instructors to the inexperienced searcher.

Restoration and Archiving

Libraries of the world exist to hold and preserve the human documentary heritage in whatever form that heritage might be represented and upon whatever medium it might be inscribed, and to make it available to a wide range of users. . . . For users, the format of the documentary materials being accessed is generally irrelevant and only becomes an issue if access is impeded.⁸¹

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76. Philip M. Davis, *For Electronic Journals, Total Downloads Can Predict Number of Users*, 4 PORTAL: LIBR. & ACAD. 379, 388–89 (2004) (indicating that while access numbers are not good predictors, downloads are).
 77. As one example, "The library at Washington University reports 150,000 hits per year on its electronic, networked *Encyclopedia Britannica* at a cost to the library of \$.04 per hit. This use rate seems to be an order of magnitude larger than the use rate of the print version of the document in the library." Malcolm Getz, *Electronic Publishing in Academia: An Economic Perspective*, in TECHNOLOGY AND SCHOLARLY COMMUNICATION 102, 102 (Richard Ekman & Richard E. Quandt eds., 1999).
 78. Davis, *supra* note 76, at 385.
 79. "When asked to speculate on the total percentage of each format in their library's collection, 34% of the responding librarians indicated that 61–80% of their collection was in print, while 29% responded that fee-based online access was closer to 21–41% in their library." Reach, *supra* note 48, at 376, ¶ 20.
 80. *Id.* at 375, ¶ 17.
 81. Marilyn Deegan, *The Spectrum of Digital Objects in the Library and Beyond*, in THE DIGITAL FACTOR IN LIBRARY AND INFORMATION SERVICES 3, 3 (G.E. Gorman ed., 2002).

¶72 Many users, particularly students and the public, want data, in any format. Even when paper is preferred, obtaining content in digital form is better than no data at all. Though paper does not suffer from the technological instability of online data, it does age. Pages become brittle; text fades; acids, temperatures, humidity, and various environmental factors lead to deterioration of physical forms.

¶73 Digital restoration and archiving reestablish failing texts and sustain their contents for other users. The physical form and texture may not be salvageable, but the knowledge contained within will survive in some format. Innovators, like Google, have initiated ambitious digitization projects, whereby entire library collections will be transformed.⁸² Should such endeavors succeed, they will drastically expand the proportion of edited information on the Web, and make available to far-flung researchers the contents of respected United States' libraries. They will also encourage the use of print materials, as online indexing of monographs metamorphoses them into readily searchable data. As these titles are referenced in Google, information seekers will request the physical texts for more thorough readings.

Conclusion

¶74 "The mere existence of information does not guarantee its actual use; the format of its presentation has a material bearing on making content either easy or difficult to use. . . ."⁸³ Though Mann's intent was to bolster the use of print materials, his sentiment applies equally to digital data and, indeed, to any newly introduced format.

¶75 Recent patron demands for the dissolution of the physical library and its collection are driven by the heady effects of instantaneous gratification provided by technology, the resulting belief that everything can be found online, convenience, and sophistication of use. Undoubtedly, advances in technology will continue to open new doors for researchers, but the more appropriate focus may be the value of any door to information, and not just novel ones. As Mann also states, "Electronic formats are here to stay. Whether they should be regarded as additions to book collections or substitutes for them in research libraries is the point at issue."⁸⁴

¶76 Print formats have independent value and contain centuries of information not yet available in other formats. Additionally, the wonders of technology arrive with countervailing questions about preservation, long-term research needs, content quality, document control and authenticity. Technology's nature makes it vulnerable to attack, modification, and disappearance, and its evolution has not yet

82. See Google Press Release, *supra* note 2. As the digitization of a single library—University of Michigan—is expected to require seven years to complete, Google will have the time to examine unresolved questions about filtering, copyright, and preservation.

83. Mann, *supra* note 41, at 270.

84. *Id.* at 268.

reached a point where it rivals print in stability, longevity, and ease and comfort of use.

¶77 Presently, print and e-formats each have exclusive values, and until those values can be replicated in other media, both formats must be collected, maintained, and supported by libraries. Standard 606 of the American Bar Association's Standards for Approval of Law Schools clearly recognizes the importance of multiformat libraries by requiring that academic law library collections provide access to both tangible materials and electronic information.⁸⁵ Libraries serve as gateways, and librarians as experienced and knowledgeable guides in the use of emerging and existing media in the pursuit of information. Neither print nor digital information can be ignored or avoided, as both play critical roles in the academic law library's survival.

85. SECTION OF LEGAL EDUC. & ADMISSIONS TO THE BAR, AM. BAR ASS'N, STANDARDS FOR APPROVAL OF LAW SCHOOLS 2003–2004, stand. 606, at 47 (2003).