abstract: This bibliographic essay examines the difficulties associated with the selection, licensing, acquisition, and management of e-books in academic libraries. The potential advantages of e-book technology are likely to be realized only to the extent that they advance the economic goals of e-book suppliers and are consistent with the legal framework that has been negotiated by publishers, vendors, libraries, and readers. Many difficulties can be traced to a lack of uniformity in license terms, access restrictions, and librarians' expectations. Likewise, sustainable access to e-books is hindered by impermanent physical media, proprietary file formats and software, and restrictive license provisions. Although the goals of e-book providers are sometimes inconsistent with those of universities, librarians are well-positioned to guide vendors in the development of e-book licenses and platforms.

Introduction

Thousands of advertisements, press releases, and magazine articles draw attention to the real and perceived advantages of e-books. A simple Google search will bring up news of several college libraries that have adopted e-book collections on a large scale, sometimes to the near exclusion of print titles. Information on the advantages of e-books is readily available, since every e-book publisher, aggregator, and vendor has an interest in disseminating that information as widely as possible.

In contrast, many of the challenges associated with academic e-books are not well known among librarians, students, or university administrators. This bibliographic essay examines the difficulties associated with the selection, licensing, acquisition, and
management of e-books in academic libraries. The goal is not to discourage the appropriate use of e-books, but to make librarians and faculty aware of the problems associated with the large-scale adoption of e-books in the academic environment. The information presented here may be useful to students and scholars, to librarians considering the place of e-books in their libraries' collections, and to publishers and vendors that might benefit from a library-centered perspective. It may also provide a good background for senior administrators who see the advantages of online access—the success of e-journals, for example—but who may not be familiar with the ways in which e-books are different from other online resources.

Scope and Methods

This paper discusses recent research and practice in the United States and the United Kingdom. It does not explore cataloging issues, attitudes toward e-books, or the impact of e-books on the reading behavior of students and faculty. Likewise, it does not examine restrictions on the sharing and use of e-books—limits on downloading, printing, and lending, for example—except to the extent that they bear on licensing and collection management issues.¹

Relevant studies were identified through searches of Library Literature & Information Science, LISA (Library and Information Science Abstracts), LISTA (Library, Information Science & Technology Abstracts), Google Scholar, and WorldCat. Journal browsing and citation tracing led to the discovery of additional papers. All relevant studies were read and evaluated, whether critical or supportive of e-books. Of the 110 works cited here, half were published in peer-reviewed journals. Another 41 percent appeared in professional magazines, books, or reports. Two-thirds of the cited works were published in the last three years (2010–2012); 86 percent were published in 2007 or later.

Although this essay emphasizes the challenges associated with e-books, it does not exclude evidence that is contrary to the points made in the text. For instance, the assertion that no more than half of all scholarly titles are available as e-books is well supported by the literature as a whole. The works supporting the statement are cited in the text, and no uncited studies present contrary evidence.

Scholars have defined e-books in a variety of ways.² Most definitions include several elements: digital format, online delivery, text (with or without audiovisual content), monographic rather than serial publication, and accessibility through an optical display. The definition adopted here includes two additional elements: (1) length comparable to that of a printed book and (2) access restricted to those who have paid, directly or indirectly. Free online resources are excluded from this definition because they are exempt from most of the licensing restrictions that apply to leased e-books. Reference works are also excluded, since they often contain serial components.³

Most students and faculty read academic e-books on desktop or laptop computers rather than iPads, Kindles, smartphones, or other mobile devices. Recent data from more than 360 American universities reveal that 84 percent of students read e-books on their personal computers or laptops; 70 percent use library computers, 12 percent use dedicated e-book readers, and 22 percent use other portable devices.⁴ (Respondents could select more than one option.) Consequently, the literature on academic e-books tends to focus
on e-book files (texts) rather than the devices on which they are read. This discussion
maintains that emphasis; it is not specific to any particular reading device or format.

**Current Status of E-books in Academic Libraries**

The consumer e-book market has grown steadily since 2006, and e-books now account
for five percent of all US book sales.⁵ Sales of both e-books and print editions continue to increase by about
five percent per year.⁶ The consumer e-book market is dominated by two companies—Amazon and Barnes &
Noble—that together account for 85 percent of all consumer e-book sales.⁷ However, neither company has a significant presence in the library e-book market. For
e-books other than reference titles, the largest US library vendors are EBSCO (formerly
NetLibrary) and ebrary.⁸

Nearly 90 percent of university libraries owned or subscribed to e-books in 2007.
More recent estimates range from 94 to 97 percent.⁹ At the same time, however, most
libraries have been tentative in their acquisition of e-books, confining their selections to
reference works, textbooks, or specialized collections in particular subject areas. Current
data reveal that the majority of university libraries spend less than six percent of their
acquisitions funds on e-books; only one in twenty libraries spend 25 percent or more.¹⁰
Overall, librarians seem eager to acquire some e-books but reluctant to divert resources
from their print acquisition programs.

Maxim van Gisbergen, product manager for e-books at Swets, has acknowledged
that several factors hinder the acceptance of e-books by faculty and librarians.¹¹ These
include publication delays, restrictive license terms, limitations on the use of e-books for
interlibrary loan, the absence of standardized e-book formats and access mechanisms,
and the lack of transparency in publishers’ pricing and licensing models. Librarians’
complaints are consistent with those of van Gisbergen. According to a 2010 survey of
364 US academic libraries, the most serious problems are patrons’ lack of awareness
of e-books, license restrictions that limit usability, poor onscreen presentation of text,
limited availability of academic titles as e-books, “users prefer print,” unintuitive and
unnecessarily complicated e-book interfaces, difficulty making annotations, and dif-
ficulty identifying relevant e-book titles.¹² Other recent studies conducted in the US,
the UK, and Ireland have revealed the same problems, along with four others: high
cost, unsatisfactory pricing models, unsustainability, and difficulty integrating e-book
acquisition and cataloging into existing workflows.¹³

Dennis Dillon has summarized the state of e-books in academic libraries: “Consumers,
publishers, and librarians have all extended their embrace of e-books, although
libraries and publishers have done so somewhat reluctantly.”¹⁴ Likewise, Nicholas Joint
has concluded that “the e-book has not proven itself as a transformational technology
in the context of library services [although] it does have the potential to do so, if certain
problems related to usability, business models and library finding tools are addressed.”¹⁵

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Most students and faculty read academic e-books on desktop or laptop computers rather than iPads, Kindles, smartphones, or other mobile devices.
Overall, the recent literature reveals an e-book landscape that is both promising and problematic.

**Availability of Scholarly Titles as E-books**

E-book selection, acquisition, and management can be complex and expensive. These activities become cost-effective only when libraries can take advantage of economies of scale—only when the necessary procedures can be made routine and delegated to support staff. Much the same argument can be made from the patron’s perspective. The effort required to find and use e-books is likely to be worthwhile only if patrons have a significant chance of finding e-book titles that meet their needs. As Robert Slater has observed, “a critical mass of electronic books is necessary in a patron’s subject area before they begin to accept, expect, and regularly use those e-collections.”

Building a strong e-book collection is difficult, however, since many academic titles are not available in any e-book format. This has been a major factor in librarians’ reluctance to commit to e-book collections. For one thing, most e-book publishers and vendors focus on popular titles rather than the academic market. Scholarly titles account for just one-tenth of all e-books. In contrast, romance and erotica are among the top-selling genres.

Moreover, the major library e-book vendors offer just a fraction of the titles that academic librarians are likely to need. In 2004, no more than six percent of the most popular academic titles were available through NetLibrary. The situation has improved in recent years, but not as much as e-book proponents might hope. In 2011–12, the largest library e-book vendor, ebrary, offered just 31 percent of the print titles profiled by YBP Library Services.

Current data for the author’s institution, Menlo College, support the same conclusion. Of the 389 print titles we received from our main book vendor (YBP) in the fourth quarter of 2011, fifty percent were available as e-books in April 2012. (YBP supplies e-books from all the major academic publishers and aggregators.) Specifically, 44 percent of the titles were available from ebrary, 36 percent from EBSCO, and 31 percent from EBL (Ebook Library). Sixteen other publishers and aggregators could each supply no more than two percent of the titles acquired in print by Menlo College.

Studies of e-book availability in particular subject areas further demonstrate the problem. In 2008, librarians at the University of Alabama tried to build an e-book collection for the School of Medicine but found that many of the titles identified by faculty as essential reading were not available in any digital format. Likewise, the staff of the University of Pittsburgh Health Sciences Library concluded in 2011 that no e-book vendor could provide the titles they needed for their core health sciences collection. Many key titles were not included in any e-book collection, and every collection included a substantial number of unwanted titles. Studies conducted in 2009 and 2010 reveal that e-book providers can supply fewer than half the titles listed in Doody’s Core Titles in the Health Sciences, only 31 percent of the nursing
and business titles acquired by Adelphi University, and fewer than 17 percent of the
titles that appear on the reading lists for philosophy, psychology, politics, and nursing
at University College Dublin.25

Licensing issues can influence the availability of e-books across national boundar-
ies.26 E-books available in Canada are sometimes not available in the United States, for
instance, and customers (or libraries) with foreign credit cards may be unable to obtain
certain titles. Likewise, previously acquired e-books may become inaccessible if the user
crosses into a nation where the original license agreement is not in force.

More generally, there is a clear need for better selection tools. As Sarah Thompson,
and Steve Sharp have noted, the lack of a single cross-publisher database—an “E-books
in Print”—makes it difficult to confirm “which titles are available as e-books, which
platforms they are available on, and what they cost.”27 In practice, selectors tend to
rely on both Amazon and their library vendors’ databases. Nonetheless, the absence of
reliable selection tools remains a significant problem in identifying the e-books that are
most relevant for academic libraries.28

Delays in the Release of Academic E-books

Because nearly all books are typeset electronically, digital distribution has the potential
to reduce the time between the acceptance of a book manuscript and its delivery to the
public. That potential has not been realized, however. In fact, many academic e-books are
released three to eighteen months after the corresponding print editions.29 These embar-
goes are intended to protect print sales. As Dracine Hodges and associates have noted,
“[t]he timing of each release [hardcover, softcover, and e-book] is based on a schedule
that publishers hope will maximize profit.”30 Some publishers release the e-book at the
same time as the print edition, but only to consumers who acquire the title directly from
the publisher. Those who use library vendors or other third-party channels must wait
several months before the e-book is available. Such embargoes reflect the fact that direct
sales tend to generate higher profits than sales through vendors.31

E-book embargoes are especially problematic for library approval plans.32 If an ap-
proval plan includes both print and e-book editions, the notification for a print edition
may arrive several months before the e-book notification. In that situation, the selector is
likely to choose print even if the library has made a commitment to e-books. On the other
hand, an “e-book only” approval plan is likely to delay the acquisition of important titles.

E-book Leasing and Licensing

Unlike print books, e-books are leased rather than purchased. Publishers and vendors
offer three kinds of e-book leases:

- Annual access: The library pays an annual fee for one year’s access. The lease
can be renewed each year.
- Perpetual access: The library pays a one-time fee. There may also be an annual
platform fee.
- Pay per use: The library is billed, or debited from a prepaid account, based on
the number of uses (titles viewed, pages viewed, etc.). There may be an annual
platform fee.
All the major e-book vendors offer annual access, and one-third offer perpetual access. In 2007, about 75 percent of annual and perpetual access leases were priced according to the number of students enrolled; 25 percent were priced according to the number of concurrent users.  

Implications of Leased Access

As David Ball has observed, the shift from ownership to leasing—from product (printed book) to service (online access)—has major implications for libraries and their patrons. For example, the purchase of a printed volume gives patrons permanent access to the content of the book. With leased e-books, however, only the perpetual access option allows patrons to view the content once the library has stopped making payments. Even then, many perpetual access licenses require the payment of annual platform fees of several thousand dollars or more. Others demand that libraries acquire more e-books each year in order to maintain access to the titles already in the collection. Consequently, even perpetual access leases may involve a long-term obligation. Emilie Delquié and Sue Polanka have stated the problem clearly: “Up until now, a library could buy a book and own it forever…. For e-books, however, the concept of long-term ownership is currently not systematically offered by publishers, leaving libraries the choice between losing access to content they paid for once or paying a fee for as long as they wish to maintain their access.” In both the US and the UK, annual access payments are a major factor in librarians’ dissatisfaction with e-books.

The underlying problem is clear; most e-book licenses require annual (recurring) payments for access to a set of titles that does not change or grow appreciably over time. This represents a major shift, not just from the print purchase model, but from the licensing terms that prevail for online journals. After all, an online journal subscription—even one without perpetual access rights—provides access to a body of content that grows on a quarterly, monthly, or even weekly basis. In contrast, most e-book leases provide no additional content with each subscription term. For publishers and vendors, this model is ideal because it allows them to generate a continuing revenue stream without producing any new content. In most cases, each new edition of an e-book counts as a new title—a new set of annual payments.

E-book distributors are not in the business of providing access to information. Instead, their aim is to package and market information in ways that generate revenue. In fact, many publishers and vendors have strong economic and legal incentives to limit access to information—in particular, to lease information rather than transferring ownership. They also have an interest in maintaining control over the products they lease, through digital rights management (DRM) and other restrictions. Although e-book technology offers the potential for unrestricted access to information, the possibilities inherent in the technology are often at odds with the economic goals of those who control it.
sibilities inherent in the technology are often at odds with the economic goals of those who control it.

Legal Aspects of E-book Licensing

The unrestricted lending of printed books is a commercial publisher’s nightmare. In the United States, libraries pay no more than individual users yet gain full ownership rights: the right to lend the book to dozens or even hundreds of patrons; to copy it, within the Fair Use and Educational Use provisions of copyright law; to send it to other libraries and their patrons at a discounted postal rate; and, finally, to sell or give it away in a transaction that may cut even further into the publisher’s income. If the rules were being written today, how many publishers or vendors would agree to these terms?

In fact, the rules are being written today, at least within the digital realm, and publishers see an opportunity to limit libraries’ rights—to end the advantages that libraries have enjoyed for the past century. The notion that everything is different in the online environment has helped publishers strengthen their own standing through legislation such as the Digital Millennium Copyright Act, which allows vendors to restrict the use of digital content in ways that would otherwise be permitted under copyright law. A 2011 obituary of Michael Hart, the founder of Project Gutenberg, described the technological possibilities of e-books as well as the serious problems associated with e-book licensing and control:

“The joy of e-books, which he invented, was that anyone could read those books anywhere, free, on any device, and every text could be replicated millions of times over…. If all these upheavals were tardier than he hoped, it was because of the Mickey Mouse copyright laws. Every time men found a speedier way to spread information to each other, government made it illegal.”

Even without the adoption of new legislation, two fundamental characteristics of e-book licensing limit the rights of libraries and their patrons. The first is the simple fact that e-books are leased rather than sold. For that reason, they are not covered by the First Sale Doctrine, which was first recognized by the US Supreme Court in 1908. The First Sale Doctrine allows the owners of printed books to lend, rent, resell, or otherwise transfer them without restriction. It does not apply to leases, however. In fact, many e-book contracts specifically prohibit the transfer of content to anyone other than the original lessee.

Second, many e-book licenses require libraries and end users to give up rights that would otherwise be theirs under the Fair Use and Educational Use provisions of US copyright law. For example, nearly all e-book licenses prohibit interlibrary lending, and many restrict the use of e-books for course reserves. Likewise, the Fair Dealing provisions of the UK Copyright, Designs and Patents Act do not apply to leased e-books. Activities such as copying for long-term preservation and reformatting for patrons with disabilities are therefore disallowed by most license agreements.

Even though most licenses favor e-book publishers and vendors, some publishers continue to see library lending as a threat. Dennis Dillon has pointed out the fundamental problem: “Since libraries exist to buy a book once and share it many times, it’s...
only common sense that publishers are not eager to undercut potential consumer sales by designing e-books that work well in a library setting.”46 In particular, commercial publishers have a strong interest in promoting the “one license, one end user” business model. As of February 2012, at least four major trade publishers—Hachette, Macmillan, Penguin, and Simon & Schuster—had stopped selling e-books to American public libraries on the grounds that library lending was cutting into their sales.47

The Need for Standardization of License Terms

Online journal publishers were quick to see the merits of a standard business model based on a single file format (PDF); the absence of technological restrictions on the downloading, transfer, and printing of files; and reasonable license provisions that maximize both readership and revenue. In contrast, few e-book publishers have developed business models that allow them to succeed through user-friendly license provisions.

There is wide variation in the access and pricing models offered by e-book distributors, and an equally wide range of restrictions on the viewing, downloading, printing, and sharing of e-book content.48 Of the large commercial publishers, only Springer distributes e-books in PDF format without DRM restrictions.49 The standardization of license terms might help allay librarians’ concerns about the large-scale acquisition of e-books. Under current conditions, the need to manage a wide and conflicting array of license provisions increases the overall cost of acquiring and maintaining e-book collections.

Academic E-book Publishers, Aggregators, and Vendors

E-books are marketed to academic libraries through four main channels:

- **Publishers** that offer content directly to libraries. These include Elsevier, Oxford University Press, the Royal Society of Chemistry, and Springer.
- **Specialist aggregators** that package and present e-books—often reference works—in particular subject areas. For instance, Knovel offers engineering titles from nearly 100 publishers. Likewise, Safari offers e-books in management and technology from about 50 publishers. Alexander Street Press provides access to more than 90 collections in the social sciences and humanities.
- **Large aggregators** that offer e-books in many disciplines from multiple publishers. The largest aggregators include Dawsonera, EBL, ebrary (a subsidiary of ProQuest), EBSCO (formerly NetLibrary), and MyiLibrary (a subsidiary of Ingram). Recent nonprofit initiatives, such as those of JSTOR and Project MUSE, also fall into this category.
- **Library vendors** that provide print volumes as well as e-books. For example, Blackwell, Coutts, Swets, and YBP each offer e-books from both aggregators and individual publishers.

The large aggregators are of particular interest due to the wide range of titles they make available. Even in 2009, the six largest aggregators each offered at least 45,000 e-book titles from more than 100 publishers.50 The major library vendors are also especially important, since their online databases allow library staff to select e-books through much the same mechanisms they use to order print volumes. That is, library vendors provide
William H. Walters

an e-book ordering workflow that many library staff are already familiar with. Vendors such as Blackwell, Coutts, Swets, and YBP now account for more than half of all e-book acquisitions in academic libraries.51

Two 2010 studies have identified the publishers and aggregators that college and university librarians are most likely to use when ordering e-books. According to a survey of 364 academic libraries in the United States, the top aggregators and publishers are NetLibrary (used by 75 percent of respondents), ebrary (52 percent), Gale (49 percent), Oxford Reference (41 percent), and Credo Reference (29 percent).52 Likewise, data from more than fifty academic libraries reveal that nearly two-thirds have NetLibrary contracts. The other popular aggregators include Gale (53 percent), ebrary (45 percent), Safari (26 percent), MyiLibrary (16 percent), EBL (10 percent), and Knovel (10 percent).53 (These data include e-books ordered through library vendors as well as those ordered directly from publishers and aggregators.)

Further evidence suggests that academic libraries do not use the same aggregators and vendors as public and school (K–12) libraries. According to Sue Polanka, the three primary sources of e-books for public and school libraries are Follett Digital Resources, OverDrive, and NetLibrary.54 Of those, only NetLibrary has a significant presence in the postsecondary library market. Moreover, academic libraries do not acquire e-books through the same channels used by individual consumers. Of the 52 academic libraries surveyed by Primary Research Group in 2010, the average annual expenditure on Amazon e-books was just $11.56.55 None spent more than $500 on Amazon e-books, and no library in the sample reported the acquisition of e-books from Borders or Barnes & Noble.

Although consortial licensing is central to many libraries’ online journal collections, academic library consortia accounted for just 39 percent of e-book expenditures in 2010.56 The difficulties of leasing e-books are multiplied when consortia, rather than individual libraries, handle licensing and payment.57 In particular, large consortia may not have the flexibility needed to manage e-book licenses for the many types of institutions that fall within their purview. Moreover, the license terms and pricing models that are best for specialized research institutions may be very different from those desired by undergraduate colleges. Several consortial projects are underway, however, and other libraries may benefit from these early efforts.58

E-book File Formats

PDF is universally accepted as the standard file format for online journal articles. In contrast, there is no standard format for e-books. In 2001, at least 21 e-book file formats were in use.59 Due to the volatility of the e-book marketplace, the number has not changed appreciably since then. The latest Library and Book Trade Almanac lists sixteen file formats that are currently in use, and other sources list up to 27.60

Many librarians regard the multiplicity of e-book file formats as a major disadvantage.61 For one thing, it limits the cross-platform compatibility of e-books. Many formats are readable only through a particular publisher’s web site or device. For example, Kindle e-books can be read only on a Kindle.62 Moreover, many file formats have been abandoned after just a few years as e-book suppliers merge or go out of business.
Survey responses from 364 American universities reveal that PDF format is preferred by most academic librarians (53 percent); the only other formats preferred by more than fifteen percent of respondents are HTML (32 percent) and ePub (16 percent). The popularity of PDF format is no secret. As early as 2002, executives at McGraw-Hill recognized that PDF format was favored by the academic and professional markets, and most e-book providers (including Dawsonera, EBL, MyiLibrary, and NetLibrary) now offer at least some e-books as PDF files. Difficulties still persist, however. In particular, many of the companies that support PDF format do not use it as their native file format. Instead, they use conversion software that may produce an inaccurate rendition of the original file. That is, the same PDF file may display differently on different platforms.

In 2007, the International Digital Publishing Forum developed the EPUB file standard in an attempt to increase the extent to which content can be transferred from one system to another. Theoretically, an EPUB-compliant book can be read on any computer or mobile device. However, EPUB does not ensure consistency in the presentation of text and images. A file may be readable on many different platforms, but it will not necessarily look the same on each one. Another drawback, from the library’s perspective, is that even EPUB-compliant files can be “locked down”—restricted to a single platform—if the publisher or vendor chooses to add DRM restrictions. As Delquié and Polanka have pointed out, “For fear of piracy and lost revenues, nearly all publishers add DRM to e-books, even those in EPUB format. Purchasing an e-book locked down with DRM limits its use to a particular reader or platform, thus rescinding the benefits of EPUB.”

Acquisition of Individual Titles and E-book Packages

Academic e-books can be selected and acquired either as individual titles or as e-book collections (packages) that represent particular subject areas or publishers. The available options vary by aggregator. For instance, ebrary allows libraries to select individual titles or to choose from more than fifty subject-based packages. EBSCO offered only title-by-title selection until the release of their first e-book collection in early 2012.

British universities spend more on e-book packages than on title-by-title acquisitions. This may reflect a desire to build a critical mass of e-books at the outset, or to keep per-title costs as low as possible. In American academic libraries, e-book collections and title-by-title acquisitions are equally important. Overall, librarians have expressed a strong preference for title-by-title selection. For example, nearly ninety percent of British academic librarians with an interest in e-books report that they would prefer to select each title individually.

Few e-book suppliers give librarians any ability to determine which titles are included in the packages they acquire. In fact, many vendors and publishers reserve the right to add or withdraw titles from the collection during the subscription period. At the University of Auckland, vendors repeatedly removed titles and changed e-book URLs without notifying the library. As Ksenija Minčić-Obradović has pointed out, “This cre-
ates difficulties when a lecturer chooses an electronic title for recommended reading and then, half-way through the course, without any notice or explanation from the vendor or publisher, the e-book is no longer available.”

Moreover, many packages include backlist titles that publishers offer to aggregators only because they know that print sales have already run their course.74 In recent years, at least some publishers and distributors have been more open about this. In 2009, for example, ebrary offered backlist titles from more than twenty publishers at half off the usual price.75 Other publishers actively market their backlist packages to librarians who want to build their collections quickly. Elsevier now offers 63 complete book series in digital format, and Emerald provides access to nearly 800 backlist titles in business and the social sciences. In October 2011, Springer announced an ambitious project to digitize their entire backlist of 65,000 titles dating back to 1840.76

Unfortunately, nearly all e-book collections—like Big Deal journal packages—require libraries to pay for titles they don’t want in order to get the ones they do want. The consequences of this can be seen in libraries’ use statistics; e-books acquired through packages generate far less use per title than those selected on a title-by-title basis.77 Moreover, the marketing of e-books as collections rather than individual titles (or individual chapters) is directly contrary to the technological capabilities of the format, as David Ball has pointed out: “In the electronic environment, where the physical package—the title—is no longer necessary for purchase, our aim surely should be to increase the granularity of decision making, not decrease it.”78

The inclusion of unwanted titles in e-book packages is of special concern in the academic setting, where librarians have a responsibility to guide patrons toward high-quality resources and away from those that are unlikely to serve them well.79 Low-quality books, in any format, reduce the value of the collection by lowering the precision of searches, wasting students’ time, and leading them away from more valuable titles that would better meet their needs. This is of concern not just to librarians, but to faculty. Although instructors’ recommendations are central to many collection development programs, most e-book packages provide no way for librarians to act on the faculty’s requests for particular titles.80

Fortunately, title-by-title evaluations can be useful even when e-books are acquired as collections. The same principle is often applied in the evaluation of journal packages and full-text databases. Selectors might first identify the individual journals that the library ought to have, then evaluate each package to determine which one includes the greatest number of the desired titles. Alternatively, each journal might be assigned a point value so that Science and Nature, for example, are weighted more heavily than journals of lesser importance. (In that scenario, low-quality journals and those outside the scope of the collection might not be counted at all.) The same general approach can be used with e-books. In comparing e-book packages, selectors may want to evaluate a random sample of titles from each package, determining (for instance) how many of the titles would be selected if each e-book were acquired individually.

Some vendors provide a rental option, which allows for short-term access to e-books. The rental model is not popular among academic libraries, however, and has been discussed only superficially in the literature.81 Another model, patron-driven acquisition (PDA), allows patrons to select e-books for the library collection without staff mediation.
or oversight. Although B.W. Becker has asserted that patron-driven acquisition will lead to an increase in the use of academic e-books, other authors have highlighted the problems associated with the use of PDA in college and university libraries.82

**E-book Pricing**

When acquired individually, academic e-books cost more than printed books. Few scholarly e-books sell for less than the hardcover list price, and prices fifty percent greater than print retail are not uncommon.83 Perpetual access e-books typically cost 20 to 100 percent more than the equivalent hardcover editions, and many vendors charge annual platform fees as well.84

In 2005, NetLibrary offered a choice of payment plans: either a one-time payment (list price plus 55 percent) or a single payment (list price) followed by annual fees of 15 percent per year.85 Even now, publishers and aggregators continue to charge high prices for e-books. In 2011–2012, the average price of a print book profiled by YBP Library Services was $78.23 (paper-preferred) or $83.59 (cloth-preferred).86 However, the average price of an e-book was substantially higher: $95.14. The three largest e-book vendors handled by YBP—EBL, ebrary, and EBSCO—all charged average prices between $96.34 and $98.24.

A simple comparison of average prices is not entirely appropriate, however, since many e-books are reprints of titles that have otherwise gone out of print—books that cost far less than list price as print volumes on the out-of-print market.87 Fortunately, current data for Menlo College permit the comparison of print and e-book prices for the same set of titles. Of the 389 print titles acquired by the College from YBP in the fourth quarter of 2011, 196 were available as both print editions and e-books. For those titles, the lowest available e-book price is, on average, 43 percent higher than the print list price.88

For more than half the titles received by Menlo College (59 percent), the e-book price is identical to the print price. In the remaining cases, however, the e-book can cost up to five times as much as print. For the 79 e-books that cost either more or less than print, the lowest available e-book price is, on average, 2.1 times the price of the print edition. The wide variation in e-book prices may reflect differences in publishers’ pricing strategies, since there are no major differences by aggregator. For the Menlo College titles, the average EBSCO e-book price is 57 percent higher than the print list price. The average ebrary price is 53 percent higher, and the average EBL price is 47 percent higher.

**Production Costs**

Both librarians and consumers tend to feel that e-books should cost no more than print editions.89 Some see the low prices of mass market e-books and assume that the same pattern must hold true for scholarly titles. In fact, however, many companies underprice their most popular e-books in order to build market share. In 2010, Amazon offered most bestsellers in Kindle format for $9.99. According to Dennis Dillon, “Amazon was losing money on the majority of sales, but by setting its own low price for customers it was treating the books themselves as loss leaders in order to fuel the growth of the Kindle e-reader and build the Amazon customer base.”90 Although mass market e-book providers have been accused of improper collusion in setting low prices, no such allegations have been made against the suppliers of academic e-books.91
There is also a widespread assumption that e-books are less expensive for publishers to produce. That assumption is not usually valid, however. In particular, the writing, editing, and formatting processes are the same whether the final product is issued in print, in digital format, or both. Although print editions require printing, binding, and shipping, e-books have their own unique costs: online hosting, server and network maintenance, reformatting for multiple platforms or file formats, customer service, and technical support. In fact, a switch from print to digital format often results in little or no cost savings for the publisher. The commissioning editor must still receive a salary ($75,000 to $100,000) as well as travel expenses ($20,000 to $30,000). The pre-press costs are the same ($8 to $11 per page), as are the payments to authors and editors (ten to fifteen percent of net revenue from sales). Likewise, sales representatives typically receive a twenty to thirty percent commission on both print editions and e-books.

Printing and binding typically account for ten percent of the cost of a printed book, although the percentage can be as low as two percent for academic titles. For many e-books, even this small savings is offset by the cost of supporting multiple e-book formats, hosting and transmitting files, and maintaining the infrastructure needed to sell and deliver e-books. Among other things, the vendor must handle online payments, provide COUNTER-compliant use statistics, maintain a secure web site, and deal with the wide range of access problems that customers are likely to encounter. According to Joel Claypool, a publisher with more than 25 years’ experience, the costs associated with e-book publishing often exceed conventional print distribution costs.

The savings associated with a switch to digital format are especially modest for scholarly publishers. For one thing, academic books—those that are sold mainly to libraries—tend to have high up-front costs, since the identification of promising authors and projects, manuscript review, copyediting, and marketing are often more difficult than for trade books. Moreover, academic books tend to have much lower print runs, so scholarly publishers must recover their fixed costs over a relatively low number of sales. While a modestly successful novel can easily sell five or ten thousand copies, most academic titles sell just a few hundred.

Even if e-books were less expensive to produce, that would not necessarily reduce the prices paid by libraries. Although the cost of production usually represents the lowest price that scholarly publishers can charge, the actual price is determined by the amount that customers (libraries) are willing to pay. Moreover, the prices of academic books are inelastic. For mass market books, a modest price reduction can bring a substantial increase in demand. For scholarly titles, however, the market is so small and specialized that a lower price will not necessarily generate more sales.

**E-book Packages and Short-term Rentals**

On a per-title basis, e-book packages generally cost far less than e-books that are acquired individually. From 2000 to 2008, the University of Idaho leased more than 43,000
E-books in Academic Libraries

E-books at an average cost of $1.97 per title.\(^97\) The Idaho example is extreme, however, and such low prices come with a major disadvantage: the inability to control which titles are included in the initial package or added and deleted by the vendor over time.\(^98\) Moreover, even low-cost e-book packages may result in a higher cost per relevant title. Many packages include a substantial number of backlist titles that would not otherwise generate income for the publisher, and even high-quality packages are likely to include titles that do not meet the usual selection standards.\(^99\) Karen Foster and Emma Ransley, evaluating the e-book collection acquired by Yeovil College in 2011, found that “so few of the books in the package were relevant to the … curriculum that it was considered to be better value for money to buy individual titles.”\(^100\)

Of course this brief mention of low-cost e-book packages may seem disingenuous when preceded by a lengthy discussion of the high cost of e-books that are acquired individually. This simply reflects the kinds of price data that are publicly available, however. The prices of individual e-books can usually be found through publishers’ web sites and vendors’ databases. In contrast, the prices of e-book packages are based on the characteristics of each institution—the number of students and the Carnegie classification, for instance—and many license agreements are negotiated confidentially by individual libraries or consortia.

Two papers have mentioned the fees associated with short-term e-book rentals. A 2007 study cited short-term loan fees equal to just ten to fifteen percent of the print list price. However, a 2009 study reported one-week dawsonera rental fees equal to 84 percent of list price.\(^101\) In any case, e-book rentals are not popular among academic libraries.\(^102\) Most rental programs focus on textbooks and mass market titles rather than scholarly e-books.

### Sustainability of E-book Collections

For books printed on paper, long-term access is virtually assured by the existence of multiple copies in libraries worldwide. Amy Kirchhoff points out that for e-books, however, the situation is different: “E-books are not going onto the shelves of thousands of libraries and individuals; rather, they are residing in files encumbered with digital rights management (DRM) software on proprietary appliances and on vendor-held and -maintained computers.”\(^103\) Moreover, most commercial e-book providers have displayed little interest in large-scale preservation efforts. Unlike online journal publishers, they rarely support initiatives such as Portico and LOCKSS.\(^104\)

The preservation of e-books is especially difficult because each e-book consists of several distinct elements: the content and formatting of the work itself, the file format, the software needed to access and use the file, the operating system needed to run the software, and hardware compatible with the operating system. Printed books are eye-readable. In contrast, the ability to read an e-book is contingent on the existence of a complex infrastructure that may be owned or controlled by multiple agencies.\(^105\) Those responsible for the preservation of e-books must maintain the long-term usability of content (through the migration of file formats, for instance), the authenticity of content (including text, images, and page formats), discoverability (the preservation of metadata within the e-book or its package), and accessibility (through the maintenance or emulation of e-book readers, interfaces, and other access mechanisms).\(^106\)
Sustainable access, in turn, encompasses more than preservation. While preserva-
tion focuses on the resource itself, sustainable access refers to reliable, long-term access for a particular group of users, such as the students and faculty at a particular university. For example, a typical preservation policy might require that the vendor maintain a permanent electronic archive of an e-book collection. In contrast, a comprehensive sustainable access policy would ensure long-term access not just for the vendor, but for the subscribing library. There are three primary threats to sustainable access: the impermanence of the physical media on which e-books reside, proprietary software and file formats, and restrictive license provisions.

**Impermanence of Physical Media**

Users of information technology tend to think of digital information as immaterial, existing as coded data without a physical manifestation. In fact, however, every online or “electronic” resource is embedded in tangible form on a mechanical device. As Jean-François Blanchette has pointed out, “[b]its cannot escape the material constraints of the physical devices that manipulate, store, and exchange them.” Digital resources such as e-books are susceptible to the same kinds of corruption and decay that characterize other media.

In fact, the medium most often used to store e-books—the magnetic disk drive—is far less reliable than print. According to Blanchette, all such media “profusely signal their materiality, through mechanical noise, slow speed, poor reliability, and sensitivity to wear…. The defining characteristic of these devices is their reliance on mechanical motion.” Even the most stable digital media, CD-ROMs and DVDs, have a life expectancy of no more than thirty years. In contrast, acid-free paper can easily last 500 years or more. The most reliable preservation strategy for digital documents is to transfer them from magnetic and optical media to paper.

As Stephen Sottong has noted, many electronic systems are also notable for the way in which they fail. Devices such as computers and e-book readers “tend to fail catastrophically; a single transistor in one chip can turn the entire device and all contents into scrap.” In contrast, printed books tend to fail only gradually and partially, with clear warning signs and multiple opportunities for preventive action on the part of librarians and archivists.

**Proprietary Software and File Formats**

As noted earlier, at least 27 e-book file formats are currently in use, and many of them can be read only by proprietary software that is specific to a particular platform or device.
As Amy Kirchhoff has explained, “Today’s e-books are often tied to a specific piece of software, and even though an individual or library may own the bytes that compose the e-book, it is impossible to move those bytes from one platform to another. Thus it may be impossible to open those bytes and read the book in five or ten or fifty years.”

File formats sometimes change due to decisions made by publishers or aggregators. In other cases, formats are abandoned as e-book suppliers merge or go out of business. The absence of a clear market leader for academic e-books makes it difficult to gauge which file formats are likely to remain viable in the long term. Most e-book formats have lasted just a few years, and today’s readers are incapable of reading the formats that were in widespread use just a decade ago. Format migration is one possible solution, although it requires both expertise and staff time, thereby adding to the indirect cost of e-book collections.

Restrictive License Provisions

Of the three types of e-book licenses described earlier—annual access, perpetual access, and pay per use—two are incompatible with the principle of sustainable access. Both annual leases and pay-per-use agreements allow library patrons to use the e-book collection only during the period for which fees have been paid. Librarians who choose annual access agreements “are essentially betting that they will have adequate funds to pay for online access in every subsequent year. [The] inability to pay in any particular year results in the loss of all content. An institution that subscribes for five years before canceling is left with nothing in return for its five-year investment.” Perpetual access licenses do sometimes meet sustainable access criteria, but only if there are no recurring platform fees and no requirement to acquire additional e-books each year. Likewise, many e-book packages preclude sustainable access, since they allow suppliers to remove titles from the database or collection without notifying the licensee. Of course this practice makes it impossible for libraries to provide reliable, long-term access to the individual titles within the collection.

Another difficulty is the absence of archiving rights. Even those e-book contracts that guarantee perpetual access seldom provide any mechanism by which libraries can deliver e-books to patrons if the supplier goes out of business. Although the absence of archiving rights is a major factor in librarians’ dissatisfaction with e-books, even nonprofit publishers are reluctant to agree to any provisions that might cause them to lose permanent control over content. For instance, the American Association for the Advancement of Science has provided archiving rights only in response to the requirements of major library consortia—not when dealing with individual libraries.

Conclusion

Academic libraries face significant challenges related to the selection, licensing, acquisition, and management of e-books. Recent studies have highlighted a number of difficulties:

- Only half the print books acquired by academic libraries are available as e-books.
- Many academic e-books are released three to eighteen months after the corresponding print editions.
• E-book distributors have strong economic and legal incentives to limit access to information—in particular, to lease information rather than transferring ownership.
• Many licenses require repeated payments for access to content that does not change over time.
• E-book publishers have taken advantage of the changing digital environment to weaken the legal framework that has traditionally favored libraries and their patrons.
• License terms vary considerably, and the lack of standardization is a significant impediment to cost-effective e-book management.
• The multiplicity of e-book file formats poses serious difficulties for both cross-platform compatibility and long-term access.
• Although librarians have expressed a strong preference for title-by-title selection, roughly half of all academic library e-book titles are acquired through package deals.
• Most licenses for e-book packages (collections) give librarians no control over the titles included in the package. Vendors are free to add or remove titles during the term of the agreement, often without notifying the subscribing institution.
• Most e-book packages include a substantial number of titles that are not relevant to the needs of the subscribing library, including backlist titles that would not generate much revenue if offered individually.
• When acquired individually, academic e-books cost substantially more than print editions.
• For scholarly titles, the cost of producing and providing access to an e-book is usually no lower than the cost of producing and distributing a printed volume.
• The preservation of e-books is especially difficult because it requires the long-term maintenance of several distinct elements: texts, file formats, software, operating systems, and hardware.
• Sustainable access to e-books is hindered by impermanent physical media, proprietary file formats and software, and restrictive license provisions.

Many of these challenges can be traced to a more general problem: the lack of uniformity in license terms, lease conditions, access restrictions, and librarians’ expectations. As David Stern has noted, “there is still little agreement about best practices, with many possible variations that make selection, payment, cataloging, searching, and presentation extremely complex.”123

The development of a straightforward, uniform process for acquiring print monographs has been a critical factor in the success of academic libraries. It has helped undergraduate libraries control their costs while allowing the staff of the major research libraries to devote their attention to foreign, out-of-print, and non-book acquisitions. New initiatives in public services, instructional technology, and scholarly communication might not have been possible if libraries hadn’t been able to reduce the involvement of professional staff in routine book acquisitions. Unfortunately, e-books are a step backward in that regard. No one vendor can supply all the titles that libraries need, and each publisher or aggregator has unique procedures for the acquisition and processing of e-
Too often, tasks performed by student workers in the print environment require the time and attention of professional staff when e-books are involved.

Many discussions of e-books focus on the technological possibilities of the medium. However, those possibilities are likely to be realized only to the extent that they advance the economic goals of e-book suppliers and fit into the legal framework that has been negotiated over time by publishers, vendors, libraries, and readers. Librarians have an important role in shaping the e-book environment, especially since publishers have yet to agree on the best ways of providing and marketing e-books to academic libraries. As Dennis Dillon has asserted, “the e-book industry [continues] to be marked by a search for effective business models and by an uncertainty about the best long-term approach to take for different market segments.”

Likewise, Nicholas Joint contends that academic e-books will be successful only when three conditions are met—when publishers and vendors adopt a business model that maintains their revenue while meeting the needs of libraries and their patrons; when the e-book becomes “as elegant and attractive as the e-journal,” without idiosyncratic features or formats that stand between readers and the content they seek; and when librarians make e-books easier for patrons to identify and access.

Fortunately, recent e-book offerings from JSTOR, Project MUSE, and Oxford University Press have the potential to bring e-book licensing and management into better alignment with the needs of libraries and their patrons. For instance, Project MUSE e-books are released at the same time as the print editions. They are distributed in PDF format without restrictions on the downloading, printing, or transfer of files, and Project MUSE is an active participant in the Portico digital preservation program. At the same time, however, MUSE e-books are available only as broad subject collections; there is no mechanism for title-by-title selection. Moreover, the range of titles available through Project Muse and the other nonprofits is still very limited in comparison with the offerings of the major commercial e-book aggregators.

Research and Practice

Research on e-books is still in its early stages, and the absence of objective evidence on many e-book issues can be traced to the kinds of articles that have appeared in the literature. Few studies report the results of systematic research, and many are based on anecdotal evidence or on conditions at a single institution. Arguably, too many have been written by librarians who have a strong incentive to report favorably on the projects they themselves have sponsored or managed. Searches in three LIS databases suggest that fewer than thirty percent of the articles on e-books in academic libraries have been published in peer-reviewed journals. Moreover, virtually none have been written by full-time LIS faculty—by those in the best position to conduct long-term research projects.

In terms of library practice, three suggestions may be helpful. First, librarians ought to stay informed—not just about new technologies, but about the economic and legal
contexts in which information products are developed, marketed, and used. Second, decisions about e-books should be based on solid evidence, especially with regard to costs and benefits. The compilation and evaluation of evidence can inform local decisions while contributing to the work of the profession as a whole. Finally, librarians should be prepared to help shape trends as they occur—to work with publishers and consortia to develop and modify e-book licenses and platforms in ways that benefit libraries and their patrons. Although the goals of e-book providers are sometimes inconsistent with those of colleges and universities, librarians are well positioned to guide vendors’ efforts. After all, customers—not suppliers—ultimately determine which products (and which license terms) will prevail in the information marketplace.

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Notes


11. Wilkie and Harris, “E-books Face.”


53. Primary Research Group, *Library Use*.


55. Primary Research Group, *Library Use*.

56. Ibid.


61. Price, “Patron Driven Acquisition.”


65. Dillon, “E-books Pose.”


67. Ibid., 157.


70. *Survey of Ebook Penetration*.


74. Morris and Sibert, “Acquiring E-books.”


80. Tedd and Carin, “Selection and Acquisition.”


84. Morris and Sibert, “Acquiring E-books.”

85. Wicht, “Selecting.”


87. Morris and Sibert, “Acquiring E-books.”

88. These prices are April 2012 values. Four titles were excluded from the analysis due to the absence of e-book price information. The lowest e-book price is the lowest price available from any e-book publisher or aggregator handled by YBP. The print list price refers to the edition purchased by Menlo College—softcover in 104 cases and hardcover in 88 cases.


94. Ibid.


97. Sprague and Hunter, “Assessing E-books.”
104. Nabe et al., “Let the Patron Drive.”
109. Ibid., 1049.
121. Price, “Patron Driven Acquisition.”
122. Ball, “Signing.”
