

2016

Use and Cost Analysis of E-Books: Patron-Driven Acquisitions Plan vs. Librarian-Selected Titles

Suzanne M. Ward

Purdue University, ward@purdue.edu

Rebecca A. Richardson

Purdue University, rarichar@purdue.edu

Follow this and additional works at: http://docs.lib.purdue.edu/lib_fsdocs



Part of the [Collection Development and Management Commons](#)

Recommended Citation

Ward, Suzanne M. and Rebecca A. Richardson. 2016. "Use and Cost Analysis of E-Books: Patron-Driven Acquisitions Plans vs. Librarian-Selected Titles." In *Academic E-Books: Publishers, Librarians, and Users* (ed. Suzanne M. Ward, Robert S. Freeman, and Judith M. Nixon, West Lafayette, IN: Purdue University Press:127-144.

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

Use and Cost Analysis of E-Books:
Patron-Driven Acquisitions Plan vs. Librarian-Selected Titles

Suzanne M. Ward

Rebecca A. Richardson

Abstract

Many academic libraries have experimented with e-book patron-driven acquisitions (PDA) plans as small projects to test the concept of offering users thousands of titles, yet only paying for them as they are used. At the same time, many librarians continue traditional patterns of buying e-book titles the same way they bought print books for decades – purchasing titles based on their belief that these selections will be ones that local users need. This study shows that many librarian-selected e-book titles suffer the same fate as the traditional model of librarian-selected print books: many receive little or no use. The PDA model is far more effective, both by making large numbers of titles available and by leveraging tight collections budgets. This paper analyzes cost and use factors of three years of data from the Purdue University Libraries' PDA plan, and examines the same factors for librarian-selected e-books during the same time period.

The authors conclude that it may be time to consider moving PDA from its current role as a small ancillary collection development tool to become a major component of an academic library's monograph collection development program and to suggest that selectors modify their title-by-title selection habits for e-books.

The Use of Print Books

Most academic librarians are aware of the flood of articles starting in the 1960s demonstrating that high percentages of librarian-selected books were seldom or never used. One of the earliest and most widely cited studies is Trueswell's (1969) "Some Behavior Patterns of Library Users: The 80/20 Rule" which concluded that 20% of an academic library collection receives 80% of the use. Numerous later studies conducted in different sizes and types of academic libraries all confirmed some variation of Trueswell's findings: a relatively small percentage of a collection accounts for the lion's share of the use. Some authors also reported that large percentages of their collections received no use during the first few years after acquisition, after which the likelihood of any circulation activity was extremely low (Bulick, Sabar, & Flynn 1979, pp. 9-18; Hardesty 1981, p. 266). Rather than take the space to cite these studies here, the authors suggest that interested readers consult Ward's (2015, pp. 25-29) summary of these and other reports of use studies over the past 50 years. It is worth noting, however, that this phenomenon is not limited to the distant past. As recently as 2010, Nixon and Saunders (2010, pp. 151-161) reported that 46,996 (33%) of the 141,112 circulating books purchased by a large research library between 2000 and 2009 were never checked out. However, the authors also reported that during this same time

period, patrons subsequently checked out 82% of the books purchased through their library's interlibrary loan print patron-driven acquisitions (PDA) service following the first use by the requesting ILL patron.

This last finding dramatically underscores the point that patrons are good judges, at least in the short and medium term, of choosing titles that other patrons will use. Use studies for librarian-selected and patron-selected print books confirm that patrons are in fact better judges than librarians when it comes to identifying books that will meet the needs of the local user population.

Does this phenomenon also hold true now that academic libraries have embraced the e-book?

The Rise of E-Books

Most academic librarians would agree that e-books are here to stay, even if they do not completely replace the need for print books. From the librarians' perspective, e-books are easy to buy (either singly or as part of packages), require no space, never wear out, never become lost, solve the challenge of serving patrons at a distance, and provide 24/7 access to content. Librarians enjoy the ease of buying e-book packages, especially when publishers and aggregators offer attractive pricing for multiple packages, commitments over multiple years, or consortial deals. Publisher and vendor products such as e-book packages and profiled slip plans have made it possible for academic librarians to abandon much of the title-by-title selection that consumed so much time in the past.

But have librarians really learned from past lessons with print books that selecting individual titles in the hopes that users will choose them is not the most effective approach? In the past such activity might have been at least partially justified by the fact that books went out of print quickly; if librarians did not buy certain titles soon after publication, it then became even more expensive in terms of time and price to buy needed titles later. E-books, however, do not go out of print, and the print-on-demand services used by more and more publishers mean that many print books never go out of print either. There is decreasing need to buy any but the most obvious high-use titles immediately upon publication; the fear that there may not be a future opportunity to obtain them now hardly exists.

PDA plans (sometimes called demand-driven acquisitions, or DDA) offer librarians the option of adding thousands of librarian-profiled e-book titles to their catalogs or discovery layers. PDA plans involve a pre-selected number of short-term loans (essentially rental fees) until patron use reaches a certain threshold at which point the next patron use triggers the title for purchase. Librarians can thus offer far more titles than they could ever afford to buy outright and pay only for what their patrons actually use. Patrons remain unaware that PDA e-book titles are any different from other e-books that their library offers. Based on the analysis of print PDA plans, typically linked with interlibrary loan requests, it is reasonable to predict that patron-selected e-books will also enjoy both high subsequent use and better overall use than librarian-selected titles.

Yet despite the early promising results of e-book PDA services, librarians seem reluctant to abandon the traditional activity of title-by-title selection in cases when there

is no pressure to acquire books before the moment of need. Thousands of e-book titles are candidates for cost-avoidance, or at least cost-deferment. Instead of buying these books now, librarians can wait for the future moment when a user actually demonstrates a need for a particular title. If the title is part of an e-book PDA plan, the need is fulfilled instantly and possibly only at a low rental fee (short-term loan) if the title is only needed once or twice.

The authors hypothesized that their library's e-book PDA plan was a cost-effective method to:

{Editor: Place the following in a bulleted list.}

- meet patrons' immediate needs for occasional use of many titles (short-term loans)
- add relevant e-book titles to the permanent collection based on patron use (autopurchases after three short-term loans)
- add relevant titles to the collection that demonstrate a strong tendency to enjoy further use after purchase.

The authors also wanted to examine librarians' single title e-book buying patterns and patrons' use of those selections. They wondered if they would encounter similar overall results as with print books, that is, that patron-selected e-books would on average enjoy higher use than librarian-selected titles. Although patron satisfaction as

evidenced through use was the most important outcome, the authors were also interested in looking at the costs involved in the two models.

Purdue University Libraries E-Book PDA Program

The Purdue University Libraries started its e-book PDA program in March 2011 with an initial pool of 11,255 titles published from 2009 onwards. Purdue chose EBL for its PDA plan and worked through its book vendor YBP to establish the profile. An average of about 160 new titles meet the profile and are added every week. No titles have been weeded to date, bringing the total number of PDA titles to 38,549 at the end of February 2015.

For the purposes of this study, the authors focused on the e-book PDA titles added between March 2011 and February 2014 (32,988 titles). When they conducted the analysis in January 2015, they looked at the *costs* for titles added during this three year period and looked at *use* for these titles during the period March 2011 to August 2014 (three and a half years).

Methodology

The authors consulted EBL reports to determine costs and use. LibCentral, EBL's administrative site that collects pertinent information unique to each institution, supplied most of the reports; however, the authors also requested a custom EBL report to obtain data unavailable from LibCentral.

To analyze the costs associated with PDA and librarian-selected titles, the authors used EBL's Sales Report. This report contains the invoice date, EBL ID, title, publisher, eISBN, purchase type, cost, and other pertinent bibliographic information. Using the Sales Report, the authors determined the number of short-term loans and autopurchases and the costs associated with them, as well as purchase information for the titles purchased outright.

To analyze use, the authors pulled EBL's Use report. This report contains detailed use information, such as reader duration, the number of pages read, as well as if the use was from a PDA title versus a title purchased outright. The report also identifies uses as browses or loans. Browses are always free (no charge to the library). For PDA, browses are defined as any use under five minutes during which the user does not copy, cut, print, or download. Copying, cutting, printing, and downloading during this five-minute period triggers a use, or short-term loan (STL) --- Purdue librarians set this loan period as 24 hours. Publishers determine the STL cost as a percentage of the list price; this percentage can vary from 5% to 30% or more. Purdue found the average STL to be about 10% of the list price.

Browsing longer than five minutes also triggers an STL. On the fourth loan, titles are autopurchased, also noted on the report. After purchase, patrons have an option of longer checkout periods. These settings are unique to Purdue; each library determines how many short-term loans to allow before autopurchase. Only titles with use show up on the report, so the authors were also able to determine which titles had no use (browses or loans) at all.

It is important to note when looking at the Use Report that not all browses are equal. Some are standalone browses, meaning that the use did not trigger a short-term loan. When a use triggers a loan or an autopurchase, it is always preceded by a browse, meaning that the use report shows *two* activities that the patron would consider a single use.

To determine what the cost of the librarian-selected titles would have been had they been added as PDA, the authors consulted EBL's Use Report and Sales Report. EBL allows 10 minutes of browse time for titles that have already been bought before a triggering an "owned loan" (compared with five minutes of browse time for unpurchased titles). Using the browse duration information contained in the Use Report, the authors could identify browses under five minutes and browses over five minutes. Browses under five minutes would still be considered browses, and browses over five minutes would have triggered short-term loans. Based on this information, the authors were able to identify, hypothetically, the number of short-term loans per title and calculate their costs using an estimated 10% of the list price, pulled from the Sales Report.

EBL also provides COUNTER reports which can be used to analyze use, although they do not contain browse and loan information or provide detailed use activity, such as the number of pages read, reader duration, etc.

PDA Use

Table 1 summarizes the use and cost data for the 599 e-books autopurchased during the PDA plan's first three years. The Purdue PDA plan allows three short-term

loans (STLs) before the fourth use triggers an autopurchase. The number of STLs and autopurchased titles (and thus total program costs) rose each year. This was not surprising; not only did the total number of available titles increase with new additions each year, but also because patrons became more accustomed to using e-books, based on the rising numbers of titles used each year. Rising average costs of both STLs and autopurchases probably stem from publishers adjusting costs for STLs and list prices as they learned how the PDA model affected their revenue.

{ED: Insert Table 1 here}

Table 2 takes a closer look at the 16,237 titles that entered the PDA plan in its first year (March 2011-February 2012) and analyzes the amount of use they had received as of August 2014 (three and a half years). Seventy percent of the titles received no use at all during this time (no browses and no loans); their list prices value these 11,438 titles at over \$1.2 million, but the cost to the library was zero. Thirty percent or 4,799 unique titles were used at least once; the value of these books totaled a little over \$533,000. Overall, the library paid an average of \$5.72 for each use (including browses, short-term loans, and autopurchases) for a total of \$93,371.

{ED: Insert Table 2 here}

In one sense, the library “saved” nearly \$440,000 by paying only for the titles that patrons used (\$533,000 total value of books used minus \$93,000 actual costs paid for STLs and autopurchases), or even “saved” \$1.66 million (\$1.753 million total value of all PDA books minus \$93,000 actual costs for use). In reality, these are phantom savings. The library would never have been able to afford buying the Year 1 pool of all 16,237 e-books and would in fact have been reckless to do so even if it had had the budget; the librarians would have known from past experience that only a small percentage of the titles would receive any use. As Table 1 shows, the cost for STLs exceeded the cost of autopurchases for two of the first three years studied. Having a large pool of potentially relevant e-books available for patrons to choose from means that many of the occasional uses, whether quick browses or longer short-term loans, met many patrons’ needs. Although there is no way to quantify them, at least some of those \$5.72 average costs per use avoided the need for a slower and more expensive interlibrary loan transaction.

How do these figures play out over the March 2011-February 2014 three-year period? During that time, the library loaded 32,988 PDA titles with total list price value of almost \$3.3 million. Users touched 7,233 unique titles (22% of the titles in the entire pool) valued at total list price of about \$784,000 (about 24% of the total value). These titles received a total of 21,015 uses (some browses, some short-term loans, and some autopurchases (see Table 3).

{ED: Insert Table 3 here}

Table 4 takes a closer look at the details of the different types of uses over these three years. Browsers accounted for 27% of the total use. Short-term loans cost the library almost \$73,000 while autopurchases cost about \$59,500, or 55% and 45%, respectively, of the total cost of about \$132,000 over the three years. It is interesting to note that “owned loans,” that is, subsequent use of titles that have been autopurchased, accounted for 34% of the total use. This important figure means that, in general, the titles that patrons use enough to trigger autopurchases are also ones that receive significant subsequent use.

{ED: Insert Table 4 here}

Subsequent use is an important measure to determine a PDA program’s success. It is also a measure that can only be determined after a PDA plan has been in place over a number of years. The authors took a closer look at the 599 autopurchases that were triggered by patron activity between March 2011 and February 2014, but they evaluated the activity that occurred between March 2011 and August 2014 (three and a half years), thus allowing the most recently purchased titles as of February 2014 at least six months more time for further activity. A few titles (7%) received no further use after the four uses that resulted in the autopurchase. The remaining 93% of titles received subsequent use, including 148 titles that clocked 11 or more uses past the autopurchase point. This is the “proof in the pudding.” the titles that patrons use enough to reach autopurchase are almost all titles that will receive further use. These are the “right” books that meet the ongoing learning and research needs of the local patron

community, at least in the short and medium term. Starting from a pool of 16,237 titles, these 599 are the ones that patrons need most at Purdue University. It would have been impossible for librarians to predict more than a few of them correctly. Table 5 summarizes post-autopurchase activity.

{ED: Insert Table 5 here}

This brings the discussion to the point of librarian-selected e-books and how well these titles meet patrons' needs.

Librarian-Selected E-Books

Purdue librarians have been buying e-books on a title-by-title basis through YBP's GOBI database since early 2010. The advent of the e-book PDA plan in March 2011 did not change this activity; librarians continued to select e-books from EBL and other aggregators through YBP, the difference being that the EBL titles were ones that did not fit the PDA plan profile. In March 2012, YBP added a feature that allowed librarians to move selected e-book titles into the PDA pool "manually" rather than buying them outright.

The authors looked at librarian-selected EBL titles for the same time period that they examined the results of the PDA plan: March 2011 through February 2014, and calculated activity from March 2011 through August 2014 to allow the titles at least six months of activity. The librarians bought 684 EBL e-books on a title-by-title basis during

the three-year period at a total cost of almost \$72,000; 189 (28%) of them (list price almost \$18,000) had no use during the three and a half year period. A further 149 (22%) of them (list price about \$14,500) had only one use. At the other end of the spectrum, 225 (33%) of the titles (list price \$26,310) enjoyed four or more uses (see Table 6).

{ED: Insert Table 6 here}

These results show how difficult it is for librarians to predict which titles their patrons will actually use. One can argue that in the end, use is the only metric that really matters; adding “good books” that nobody consults may not add much real value to a collection from the users’ perspective. If use is the critical metric, then, in this case, librarians only made very good choices a third of the time. Despite their best intentions, 28% of their choices were not helpful ones from the patrons’ point of view, because no one even browsed these books during this time period. How can librarians be persuaded to alter a lifetime’s habit of buying books “just in case” when PDA offers a “just-in-time” model that defers expenditure of library funds until the moment someone actually needs a certain title?

This raises a very delicate issue; one does not want to give the impression of making negative remarks about colleagues’ professional judgment, knowledge of their subject areas or constituencies, or their collecting habits. After all, the selections were all appropriate additions in terms of subject matter and treatment; it just turned out that, as has been shown with print book purchases over the decades, patrons do not choose

to use all of them. It is an awkward point because collection managers are often delighted when colleagues choose e-books over print books, but the managers also hope that selectors will adjust their selection habits to avoid cluttering cyberspace with e-books that nobody uses in the same way that many academic library stacks are crammed with print books that no one reads. PDA provides a way in which a library can offer thousands of relevant titles, but only buy selected ones when sufficient patron use indicates which ones are the good choices for the local collection.

The authors decided to illustrate the value of PDA over the outright purchase of seemingly appropriate titles by taking an in-depth look at the 684 e-books that their colleagues had bought and examining a “what if” scenario. What if these 684 books had all been available to add to the PDA pool at the moment that the librarians wanted to buy them? The authors know that this was not in fact possible because YBP did not offer the option of manually adding titles to the PDA pool until partway through this time period. But if these titles had been added to the PDA pool, how would they have been affected by the actual use that patrons made of them?

Table 7 shows the categories of actual patron use and the costs associated with them for the 684 books that the librarians bought outright. If these had actually been PDA books, for example, the 189 books with no uses and the 135 books with only browsing use would not have cost the library anything. The bottom line is that the total cost to the library of all the PDA activity with these titles would have been about \$28,500. Comparing this with the nearly \$72,000 that the librarians actually spent to buy these books, adding them to the PDA pool instead of buying them outright would have “saved” the library about \$43,500 over three years.

{ED: insert Table 7 here}

The concept of saving money is a little slippery in the PDA context; it really means that overall the library would have deferred some of the costs and avoided others. If a librarian buys a \$100 book today, the library pays \$100. If the title drops into the PDA pool and if nobody uses it until five years later and then only for one short-term loan, the library pays, say, \$15 for the STL at that time. If, on the other hand, the book reaches the point of autopurchase within a few months, the library pays \$145 (three STLs at \$15 each plus the \$100 list price). Since relatively few books reach the autopurchase stage, and since most autopurchased books enjoyed healthy subsequent use, collection managers would rather pay more for those specific titles that their patrons use rather than list price for hundreds of titles that are used seldom or not at all.

Another way to look at the “what if” scenario is to limit the view to the books that librarians bought in the first year (March 2011-February 2012) and then assess their actual use over the next three and a half years (to August 2014). As Table 8 shows, librarians bought 331 books in Year 1 for about \$33,000. Thirty-six percent (118) of them (list price about \$10,000) had no use; 88 (27%) of them (list price about \$10,500) had four or more uses. Table 9 breaks out the use and costs for these 331 e-books if they had been in the PDA pool; the library would only have paid about \$8,600 for 84 titles with STL activity and 14 autopurchased titles. This \$8,600 first year cost is only 26% of the \$33,000 that the library actually paid when librarians bought 331 titles outright.

{ED: insert Table 8 here}

{ED: Insert Table 9 here}

PDA Plan Enhancements

Like most other digital products and services, the PDA plan options that YBP now offers include features that build on the “plain vanilla” version that the Purdue University Libraries launched in March 2011.

In March 2012, YBP introduced the manual DDA (demand-driven acquisitions) option. This option allows selectors to move e-book titles that do not match a library’s PDA profile into the library’s PDA pool. Although these books do not meet the profile criteria, a librarian may judge them to be of potential interest to users. Rather than buying these titles outright in the hopes that patrons might eventually use them, librarians can now transfer these titles to the PDA pool where no payments are assessed unless patrons access the books. This is an excellent way for librarians to exercise their skills in collection building while deferring costs until patrons use the books (or avoiding costs completely if patrons do not select them). It is interesting to note that in the list of Purdue’s top 10 most-used autopurchased titles, three of the books were manually added librarian choices, including the top title with 1,146 uses (See Table 10).

{Ed: Insert Table 10 here}

Two other major vendors, ebrary and ESBCO, also offer PDA titles using slightly different models than EBL. Although all three vendors offer some of the same titles (often with price variations), other e-books appear on only one or two of these three vendors' lists. The Purdue University Libraries added a "cascade" of vendors in August 2014, setting preferences about vendor order for cases in which more than one holds a title. This action increases the PDA pool by adding more relevant titles and also potentially increases costs if patrons choose books that would not have been available had the library stayed with a single e-book PDA vendor.

PDA's Place in Collection Development

In many academic libraries, PDA started as a small experiment. In the original model, autopurchase occurred the first time a patron opened an e-book, even if only for a minute or two to review the table of contents. The experiences of early adopters helped shape the current model in which librarians can choose a number of short-term loans before autopurchase so that, as in Purdue's case, relatively few books receive enough use to trigger autopurchase. In these plans, libraries sometimes spend more money on STLs for occasional use than they do on autopurchases. This outcome is acceptable; the library supports meeting the needs of patrons who want occasional access to a large number of books, and also spending money to buy those few hundred titles out of tens of thousands that their patrons find valuable enough to consult more often, including after autopurchase.

Is e-book PDA the only way or the best way to build a collection? Not at all. PDA complements the large e-book packages or subscriptions that libraries buy or lease (libraries can exclude their package publishers' titles from their PDA plans). It also complements the print collections that libraries still develop. PDA cannot replace book selection in foreign languages or from publishers who do not participate with PDA vendors. But many librarians may want to consider letting PDA enjoy a bigger role than it has currently played in their libraries. PDA is a win-win solution for libraries and their users; users enjoy a far larger choice of titles than their libraries could possibly afford to buy outright, and the libraries only pay for the books that the patrons use. Studies like this one confirm that patrons have a solid track record of using titles that other patrons will also consult.

Selectors' Choices in the Digital Age

In the same way that the authors understand that PDA, although useful and effective, is not the only option for building an e-book collection, so also do they understand that selectors' experience and choices make a vital difference in shaping that collection. Collection managers usually solicit input from selectors when setting up the PDA profiles that generate both the initial title pool and the weekly new additions. Selectors join discussions about the shift away from print books and about choosing e-book packages that meet campus learning and research needs.

How is the selector's role changing when it comes to choosing books title-by-title? Fifty years of published research demonstrates that a high percentage of librarian-selected print books were never or seldom used. Before the advent of e-books, it was

understandable that librarians would make best guesses to buy the print books they thought their patrons would use before those books went out of print. Today, however, any particular e-book title will be available for the foreseeable future, so in most cases, there is no need to buy it now just in case someone might use it; the purchase can be deferred until the moment, perhaps some years from now, when someone actually does want it. This study shows that when librarians buy single e-books, the chances of use are relatively low, just as it has been for decades with print books. PDA offers the cost-saving option of presenting the titles for patrons to discover and then deferring costs until the moment of use. It does, however, require that selectors shift their habits from making outright purchases to moving relevant and eligible titles into the PDA pool instead.

There are some titles that are obvious acquisitions needed to support a particular library's clientele, for example, books used in courses, a title requested by an instructor, or a statesman's much-anticipated memoirs; these should be purchased and ready for patron use. The authors suggest, however, that buying many just-in-case titles can be deferred until the moment of patron need, ideally by offering the titles through e-book patron-driven acquisition plans, but also through rapid print fulfillment services. In many cases, the practice of deferring purchase until use means that certain books are never bought because patrons never use them. The money that would otherwise have been spent on them can be deployed for other purchases or used to replenish the PDA budget.

Conclusion

Years of analysis of librarian-selected print purchases in many libraries have shown that it is impossible for librarians to predict what books their patrons will need with a high degree of accuracy. This analysis of librarian-selected e-book purchases reveals the same tendency. However, the environment has changed enough with the advent of e-books that librarians need not re-create the same scenario in an electronic world. With PDA plans, academic librarians now have the tools to avoid the decades-old pitfall of buying in the hope of future use and then seeing 30% to 50% of their purchases languish untouched. However, as the authors' investigation revealed, old habits die hard. Selectors need to hear from their colleagues with responsibilities in collection management, acquisitions, and electronic resources that making titles discoverable is usually a much sounder fiscal practice than buying them outright. Using the data that e-book PDA vendors provide, collection managers can determine whether their patrons use librarians' individually selected e-books at significantly lower rates than PDA titles and then calculate how much money can potentially be saved or deferred by moving titles into the PDA pool rather than buying them immediately. The results may be illuminating and lead to some tough but interesting conversations with colleagues about modifying e-book selection practices.

References

- Bulick, S., Sabor, W. N., & Flynn, R. R. (1979). Circulation and in-house use of books. In A. Kent, J. Cohen, K. L. Montgomery, J. G. Williams, S. Bulick, R. R. Flynn, & N. Mansfield (Eds.), *Use of library materials: The University of Pittsburgh study* (pp. 9-55). New York, NY: Marcel Dekker.
- Hardesty, L. (1981). Use of library materials at a small liberal arts college. *Library Research* 3(3), 261-282.
- Nixon, J. M., & Saunders, E. S. (2010). A study of circulation statistics of Books on Demand: A decade of patron-driven collection development. *Collection Management* 35(3/4), 151-161.
- Trueswell, R. W. (1969). Some behavior patterns of library users: The 80/20 rule. *Wilson Library Bulletin*, 43(5), 348-461.
- Ward, S. M. (2015). *Rightsizing the academic library collection*. Chicago, IL: ALA Editions.