Chapter 9
Financial Implications of Demand-Driven Acquisitions: A Case Study of the Value of Short-Term Loans

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Selecting ebooks as part of the overall collection-development strategy in academic libraries has become commonplace. For most, electronic collections are becoming increasingly important as libraries strive to provide greater access to material twenty-four hours a day and beyond the library walls. As budget dollars migrate toward these acquisitions, libraries are looking for ways to determine the overall effect ebooks have on their collections. Because multiple models exist for adding ebook collections and for measuring their use that are impossible with print, academic libraries have investigated costs and benefits using a variety of criteria.

The models for collecting ebooks are diverse. Libraries can add large collections at a lump cost, subscribe to dynamic collections for a fee, acquire title-by-title, purchase upon patron discovery, lease books, or choose a combination of these or other options. Many libraries are moving toward models where patrons are making selections at the point of need. To do this, the libraries add large record sets to the catalogue allowing patrons to discover and access the titles, sometimes triggering a lease or purchase. Studies validating the practice of purchasing print to fill patron interlibrary loan requests have existed for years, demonstrating that materials selected by patrons are used as heavily, if not more heavily, than those acquired by librarians (Way 2009). Few studies, however, have looked at whether patron selection continues to be valid when expanded to patron-selection of electronic books, and very little has been written to examine the costs and benefits of this practice.

In 2008 the Grand Valley State University (GVSU) Libraries began to explore implementing a PDA model for ebook collections. Compelled by earlier success in implementing PDA for interlibrary loan, an increased preference toward collecting monographs in electronic format, and the

need to reallocate librarian time from collection building to other activities, the library decided to trial expanding its PDA program to ebooks.

GVSU is a comprehensive university with about 24,000 students, more than 200 undergraduate areas of study, and 27 graduate programs, almost entirely at the master's level. The University emphasizes faculty teaching over research, and graduate studies generally focus on professional programs in areas such as health care, education, and business. The library concentrates on building current collections that emphasize breadth of coverage over depth. Liaison librarians normally serve more than one major or program and are often generalists who have limited expertise in some of the areas they serve. In this environment offering a PDA option for acquiring ebooks seemed to present an attractive strategy for expanding collections.

Literature Review

Patron-Initiated Collecting

As early as 1999, the literature was beginning to examine the practice of patron-driven acquisitions in libraries. Perdue and Van Fleet (1999) reported that their efforts to shift from interlibrary loaning of current print monograph requests to purchasing these materials resulted in positive collection trends. Books purchased through their program circulated at a higher rate than firm orders and the program was judged to be cost effective.

This validation of print PDA has been affirmed in subsequent studies. Allen et al. (2003) piloted programs in one public and two academic libraries. They reviewed the length of time to receive items, patron satisfaction, and the average cost per book. Additionally, a review of titles added to the collection was performed at one library. In all three libraries, the programs were considered successful based on criteria outlined, including higher rates of circulation of PDA materials compared to those acquired more traditionally and patron satisfaction with the program. Purdue University, the only institution in the study to analyze titles acquired, noted that their bibliographers concluded that "a very high percentage of on-demand titles were appropriate for the collection" (30-31). More recently, Grand Valley State University Libraries (Way 2009) and University of Nebraska-Lincoln Libraries (Tyler et al. 2010) evaluated their ILL purchase programs, noting the

same higher circulation for PDA materials. Way went further in his analysis, reviewing peer libraries to determine whether acquisitions made through the program were owned in other comprehensive libraries. By considering libraries with similar budgets and scope, Way found that "59% of the purchased titles were owned by at least one of the peer institutions" and that "items owned by at least one peer institution circulated more often" (305-306).

As models proffered by ebook suppliers mature, libraries are beginning to implement and evaluate PDA as a strategy for ebook acquisitions. Given the seamless nature of the ebook transaction, one concern is that PDA in an electronic environment may not yield the same sort of successful results as it has for print. Concerns over spending large sums of money developing skewed collections of little or no general interest are some of the reasons given for avoiding ebook PDA programs. Price and McDonald sought to challenge the assumption "that patron-driven selection inevitably results in purchasing of ebooks that no one (or no one else) is interested in" (2009, 2). Using EBL-hosted ebooks, Price and McDonald investigated whether user-selected (patron-acquired) or pre-selected (librarian-acquired) books were used more frequently and they analyzed the breadth of the materials collected through each strategy. They concluded that user-selected books saw heavier use and were comparable in breadth and scope to those acquired through pre-selection. The University of Denver is only beginning to consider how to evaluate their ebook acquisition program (Levine-Clark 2010). They are offering patron access to ebooks through a variety of vendors. Patrons can order books under $125 without mediation by a librarian. While no analysis has yet been done, they are planning to conduct surveys of patron preferences, gathering use data, and comparing acquisitions with materials choices selectors would have added to the collection.

Cost/Benefit of Ebooks

While PDA is a relatively new strategy for acquiring ebooks, collecting ebooks is not new. Academic libraries have been grappling with how to measure the benefits of adding ebooks to their collections through a variety of approaches. Studies have compared use data for ebooks with circulation data for their print counterparts (Littman and Connaway 2004; Christianson and Aucoin 2005); have analyzed use of ebooks across disciplines (Bailey 2006; Christianson 2005; Christianson and

Aucoin 2005); or have surveyed faculty, staff, and student preferences (Gregory 2008; Hernon et. al 2007; Levine-Clark 2006).

Few studies, however, have analyzed the cost of acquiring ebooks. Sprague and Hunter (2009) started to address the question of whether ebooks are cost effective in collection development. As part of their analysis of ebook titles bought as collections, they calculated an approximate price per title at $1.97 and price per use at $3.67 based on information gleaned from contracts and use figures. The 130 titles "purchased individually cost, on average, $85.26 per title and $60.57 per use" (155). Individually selected and purchased titles were accessed at a higher rate than ebooks in packages, and the authors concluded that individually selected titles had been more valuable to users than titles acquired through ebook packages. They noted that owing to the differences in ebook pricing models and difficulties in comparing use data from multiple vendors, analysis is somewhat limited.

Another case study from the University of Westminster (Grigson 2009) aimed to take the evaluation of ebook models a step beyond cost-per-use metrics and sought to "compare the value for money offered by different e-book business models from two different suppliers" (62). Grigson suggests that "given the potential number of non-cost variables in a particular business model" (63) multiple ways of measuring value have to be considered. The analysis included comparing renewal options (full collection versus the ability to choose a set number of selected titles) and models for purchasing individual ebooks and limiting use. By combining a variety of metrics, Grigson was able to analyze historical use trends and identify the best vendor business-model options depending on library use patterns.

But Grigson did not consider PDA, and developing models for ebook PDA is complex. One of the unknowns libraries face entering into ebook PDA programs is how to budget appropriately and how to select the model that will yield greatest value for the institution. Libraries are experimenting with the variables vendors offer, including price ceilings for titles acquired through PDA, adjusting numbers of loans before purchase and loan periods, limiting the copyright dates of ebooks loaded, and restricting the title list available to users. All affect budgets. The University of Texas at Austin Libraries (UT) allocated $300,000 to experiment with Ebook Library (EBL), piloting a PDA program (Macicak & Schell 2009). They loaded approximately 85,000 titles into their catalogue for patrons to discover and use at the point of need. They "restricted the record load to EBL titles priced under $700, and opted to

mediate any STL [short-term loan[1]] transactions priced at $50 or more" (S32). At the end of their pilot, they had spent $286,849 on the program, $190,043 on loans and $96,806 on purchases. Conclusions were that they may need to lower their price ceiling from $700 and review the $50 mediation trigger. Ohio State University Libraries (OSUL) experimented with ebrary's PDA program, initially setting up a $25,000 deposit account and implementing an 18-week test (Hodges, Preston, and Hamilton 2010). Materials were excluded from the pilot load if they were pre-2007 imprints, cost over $299.99, were from a selected list of publishers, or covered certain subjects. The deposit account was depleted within four weeks, with a total of 450 titles purchased in that time. Users triggered an average of 12 purchases per day, resulting in a daily cost of about $1,150. A second test included a broader set of titles, 43,000 ebooks, with imprint dates back to 1866. Of these, 1,242 were viewed in 37-days, the same number of days the first test was available. No cost information is provided for the second test. OSUL concluded that to implement an ebook PDA program, it could cost as much as $418,000 a year and suggested that "the amount of patron use that triggers a purchase must be set far higher than present models" (220).

At this point, libraries in North America are getting used to these models and trying a variety of ways to determine their real cost and value to the institution. The answer does not appear to be in dollars alone, but includes several variables. Up to this point, studies have focused on content quality and costs of purchasing material, but none have investigated the potential cost savings of implementing an ebook PDA program or identified models for budgetary planning, which are questions GVSU sought to answer in our evaluation.

Project Overview

A variety of reasons led to implementing PDA at GVSU. The library knew from its own experiences and the extensive literature on PDA in areas like interlibrary loan that this was a valid and successful method

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1   Editor's Note: In the study cited, short-term loan meant that the library rented a book on behalf of a patron and was charged a percentage of the list price, usually 5 percent to 15 percent, for the rental. When the cost of the rental was $50 or more, the library intervened to decide whether to allow the loan.

of collection development. The library hoped to adjust its collection development practices to free liaison librarians for other activities, such as closer collaboration with faculty in areas like instruction and scholarly communications. Part of our plan was to implement narrowly defined approval plans to acquire core titles that the liaisons were generally already purchasing through the library's primary book vendor. Another part of the plan was to allocate a percentage of collection funds for PDA to provide access to books in a just-in-time model. A final reason behind the move was to simply increase the universe of books immediately available to our users.

After deciding to implement PDA, GVSU decided to use EBL as the vendor for the project. The decision was based primarily on the quality of EBL's platform; the flexibility of its model; and the content, size, and scope of its catalogue. For GVSU, EBL's platform had advantages over its competitors. Like most other ebook platforms, users can print and copy and paste from books, but unlike many platforms, which place arbitrary limits on these actions, EBL uses percentages to determine how much one can print or copy and paste. Additionally, EBL's platform allows users to download books for reading off-line and for loading to ebook readers. EBL's use model at the time was also very different from other vendors' and is in some ways much more an access than a purchase model. Users can browse ebooks for a short period before a "loan" is triggered. If a user tries to download a book or copy and paste or print, they are also prompted to accept a loan. Libraries can decide what happens when a loan occurs. A library can choose to automatically purchase the book at that point or choose to lease the book, which EBL calls a Short-Term Loan (STL). The length of the loans can be from one day to twenty-eight days, and the library has the ability to set its length. The cost of one-day STLs generally ranges from 5 percent to 20 percent of the list price of the book. Libraries can mediate the purchase or loan of a book or they can have them occur automatically in a fashion that is seamless to the patron. GVSU elected to use one-day STLs and to mediate loan-requests where the cost of an STL would be more than $40.00 US.

In addition to selecting the length of STLs, the library had to choose a default access option. EBL has two main access options for its ebooks. Nonlinear Lending (NL) allows multiple users to access books, but these books have a limited number of loan-days per year, which is generally 325 days, although for some publishers it is 200 days per year. Unless the library purchases another "copy," once the loan days

are exhausted, users cannot access that book for the rest of the year. The loan days available for each book reset on the anniversary of its purchase. Books available with the NL option generally cost the same as a cloth print book. EBL also sells some books with unlimited access (UA). These books generally cost more than their print equivalent, but access is not restricted to a specific number of use days. GVSU selected NL books as its default choice for auto-purchases. That meant if a book was available with both NL and UA models, the NL will be auto-purchased. The reasoning behind this primarily had to do with the lower cost of NL books and the belief that it would be rare for a book to be used so much that its use days would run out.

During the first half of 2009 GVSU worked with EBL to establish its account and to work out technical and billing issues. The library was uncertain as to how much this project would cost, as there were no case studies of PDA implementations at universities like GVSU. As a result the library guessed at what would be spent and budgeted $150,000 for the project, funded by a combination of reallocating 10 percent of current book-budget dollars ($70,000) and general-collections dollars ($80,000). GVSU established a deposit account with EBL. We requested that EBL generate an invoice for titles purchased and then attached an order record to each purchased book. This provided the library with a means to suppress all EBL records that had no order record, if that ever became necessary.

To further limit the library's risk of depleting its funds, only English-language monographs and those books published since 2005 were loaded into the catalogue. There was no de-duplication of these books other than to exclude all titles from Springer, which the library acquired directly from the publisher through a consortial agreement. As library staff come across duplicates (ebook/ebook or print/ebook) we suppress the EBL version, but based on the small number of duplicates that other libraries had found when they loaded EBL records in their catalogues it was felt that the time and energy placed in identifying duplicate titles at start-up would not be worth the cost savings it might achieve (Hardy and Davies 2007). In the end, about 50,000 titles were initially loaded into the library's catalogue.

Determining the appropriate point to purchase titles was another consideration. Given the way the EBL model works we felt that there was likely to be an optimal number of STLs and that one would not want to lease a book more than necessary before purchasing it. Lacking evidence on which to base this decision, we decided to purchase titles

on the third loan. As with the budget for this project, the decision was simply an educated guess. We hoped that if a book was lent three times it would continue to see a high number of loans going forward, making the early purchase a wise alternative, saving money compared with the cost of continuing to use loans.

In addition to the books that were part of the patron-driven acquisitions project, GVSU librarians also had the option of purchasing EBL books that were not loaded into our catalogue. These EBL titles would be ordered through YBP Library Services, the library's primary book vendor. Librarians were not required to purchase EBL titles, but did so when appropriate to their normal collection-development process. Librarians were able to begin purchasing these books in fall 2009, the same time as the PDA titles were made available for use by library patrons.

In fall 2009, GVSU made approximately 50,000 EBL monographs available for use in its online catalogue. The library did nothing to promote the availability of these books other than making them discoverable in the catalogue and in Summon, the library's web-scale discovery service. Each month the library loaded about 1,000 new titles supplied by EBL that met its initial criteria, and by the end of one year about 64,000 EBL titles were available to library users.

To analyze the success of the program GVSU gathered descriptive statistics that examined the use of titles and the amount the library spent during the 12 months. The library then analyzed that data, establishing metrics like cost per use. The library also examined any savings achieved through this program and whether the library should make any changes to maximize its cost savings.

Descriptive Statistics

Use of Collection

The library considered use of ebooks as one factor in determining the program's success. To accomplish this, GVSU used the COUNTER BR1 report, which calculates the "successful number of title requests." Using the BR1 report to look at a 12-month period from fall 2009 through summer 2010 the library found that 6,239 unique titles were accessed a total of 10,514 times (Table 1). The average title was accessed 1.69 times, while the median and mode accesses were one.

Second, the library examined the loans for each book. A loan can be viewed as a measure of intensity of use. A user casually browsing an EBL book or accessing a book for a short time will not trigger a loan, but a user who wants to print from a book, copy and paste from a book, or who reads the book for an extended period will be prompted to accept a loan. During the 12 months examined there were 5,251 loans for 3,696 books. Of that number, 4,572 were STLs. An additional 343 loans triggered the auto-purchase of books. And finally, 336 loans occurred after books had been purchased either by librarians or through auto-purchases.

Title Accesses	Times Accessed	Average Access / Title	Num- ber of Loans	Number of Ebooks Loaned	Num- ber of STLs	Number of Auto- purchase s	Number of loans after Auto-purchase
6,239	10,514	1.69	5,251	3,696	4,572	343	332

Table 1. Use of PDA titles over twelve months from fall 2009 through summer 2010.

Cost of Access

During the 12 months examined, the library spent $68,838 on auto-purchases and STLs. The 343 books auto-purchased cost $26,947, while STLs cost $41,891. Purchased books ranged from $855 for *Modern Aspects of Rare Earths and their Complexes* to $3.99 for books like *The Great Gatsby* and *As You Like it*. In addition, librarians purchased 25 EBL books through YBP at a cost of $2,923.

The dollars spent on auto-purchases and STLs were well under the library's $150,000 budget and are far less than what it would have cost to purchase these books outright. Based on price data provided by EBL, the cost to purchase the 6,239 books accessed during the year would be $550,464. These books ranged from $3.95 for *The Communist Manifesto* to $3,000 for the *Encyclopedia of Pharmaceutical Technology*.

Data Analysis

Cost Per Use

Table 2 shows the cost per use for all books used in the PDA program, all EBL ebooks purchased by librarians, and all auto-purchased ebooks. The data were calculated by adding the amount spent on STLs and book purchases and then dividing the number by the number of COUNTER uses for those books. As the Table shows, librarian-selected books had the highest cost-per use because only ten of the twenty-five librarian-selected books saw any use in the first year. Auto-purchased books had a higher cost per use than the larger universe of all PDA books. Part of what drove down the cost per use for the larger universe of books was that 2,536 of the books used never triggered a loan.

	$ Spent on Purchases	$ Spent on STLs	Total $ Spent	COUNTER Uses	Cost Per Use
All Used PDA Ebooks	26,946.90	41,891.49	68,838.39	10,451	6.57
All Librarian Purchased Ebooks	2,923.43	0	2,923.43	63	46.40
All Auto-purchased Ebooks	26,946.90	6,654.40	33,601.30	2,591	12.97

Table 2. Cost per use of PDA and librarian-purchased ebooks.
Cost Per Use = (Total $ of STLs + Total $ of Purchased Books) ÷ Total Number of COUNTER Uses

Cost Savings from PDA

Again, had they been purchased the cost of all the EBL books that saw any use would have been $550,465, compared with the $68,838 actually spent on STLs and auto-purchases. To calculate how much was saved using this PDA model, we subtracted the amount spent on STLs and auto-purchases from the cost of all books used. The amount, $481,625.96, is nearly half of the library's total monograph budget for a year and represents a huge savings.

Loans

The library was especially interested in examining the use of loans, in part because loans indicate intensity of use, but also because most loans were either STLs or triggered auto-purchases, both of which cost the library money. EBL's administrative reports provide statistics on STLs and on the auto-purchase of a book, which indicates the trigger of an additional loan. But there was no ready way for GVSU to determine how many times a book was loaned after it had been purchased. To examine this, EBL provided us with a custom data set on loans for owned titles.

Using these data, GVSU determined that 336 loans took place during the study period after books were purchased. Of that number, 332 loans were for auto-purchased books and 4 were for librarian-selected books. Table 3 shows the majority of the auto-purchased books saw no subsequent loans after their purchase. In addition, fewer than ten percent of the auto-purchased titles were loaned more than three times after their purchase. The librarian-selected books saw far less use than the auto-purchased titles. Only three of these books were ever loaned after they were purchased, and only one of those books was loaned more than once (Table 3).

	Zero Uses		One Use		Two Uses		Three Uses		More than Three Uses	
	#	%	#	%	#	%	#	%	#	%
Auto-purchased Ebooks	196	57%	89	26%	24	7%	12	3%	22	6%
Librarian-Purchased Ebooks	22	88%	2	8%	1	4%	0	0%	0	0%

Table 3. Use of PDA and librarian-purchased ebooks after purchase.

Using the loan data provided by EBL we then analyzed the appropriate threshold to auto-purchase titles. As mentioned earlier, because no data were available to guide GVSU in determining the optimal purchase point, we chose the third loan to trigger an auto-purchase, hypothesizing that one would want to minimize the number of STLs used before purchasing a title in order to keep the total cost of a purchased book as close to list price as possible. The loan data (Table 3) suggest that GVSU spent more money than it could have spent. We auto-purchased books too early, given that most books did not see use after their purchase.

Table 4 shows four possible auto-purchase scenarios for the GVSU libraries. Instead of auto-purchasing on the third loan, had we auto-purchased on the fourth, only 89 titles would have been bought, and we would have saved $14,055.11. Auto-purchasing on a fifth loan would have resulted in fewer purchased books and would have saved another $5,800. Auto-purchasing on the sixth or seventh loan would have meant buying even fewer books compared with purchasing on the fifth loan. A threshold at the sixth loan would have saved the library another $789 dollars over a fifth-loan threshold, while a seventh would have saved the library an additional $1,680. In sum, moving the threshold from the third to the seventh loan would have saved the library $21,574.99.

	# of Ebooks Purchased	Total $ of Ebooks not Purchased	Additional STL Costs	Total Savings over Existing Plan
Purchase on 4th Loan	89	17,382.31	3,327.20	14,055.11
Purchase on 5th Loan	58	24,512.55	4,621.09	19,891.46
Purchase on 6th Loan	34	25,722.11	5,041.64	20,680.47
Purchase on 7th Loan	22	26,899.83	5,324.84	21,574.99

Table 4. Cost projections based on setting the auto-purchase point at different numbers of STLs.

Nonlinear Loan Days

With EBL's nonlinear lending access model, each book has a limited number of days it can be used in one year. GVSU examined the number of days each purchased book was used. While we need more experience to do a thorough analysis of the NL model, during the 12 months examined, no book came close to running out of use-days. No book was used more than half of its available days, and the most popular title used 147 accesses of the 325 available over the course of eight months. This data provided GVSU with initial validation that its decision to make NL its default model was correct.

Discussion

Use of Collection

During the twelve-months, 6,239 books had some use, which was approximately 10 percent of GVSU's EBL collection as it existed at the end of the year. The percentage of use is comparable with the average use of our print collections. In any year about 9 percent to 10 percent of the print monographs in the library's collection circulate. This percentage also compares favorably to other similar ebook collections at GVSU. For example, about 11 percent of the library's 50,000 ebrary titles are used yearly. While this is not to say that an ebook use is equivalent to a book circulation, if the ratio persists from year to year, then it would suggest a model that could estimate ebook use. Likewise, if one could use ratios from other ebook collections as a guide then together with print use, a model for planning and budgeting could emerge.

As mentioned above, in addition to the use of basic COUNTER statistics, loans are an important measure of use. Of the 6,239 books that saw any use, only 59% (3,693) were loaned a percentage that will be important to monitor over time. If it remains consistent, the percentage can also be used in planning and budgeting for PDA.

Another important consideration is that 2,546 books were used by patrons but never loaned, which meant these uses cost the library nothing. The ability for patrons to "browse" books is an important cost-control feature. Giving libraries assurance that random clicking or an errantly selected book will not lead to a purchase or a loan encourages libraries to make more books available. At the same time, publishers must feel comfortable that their content is not being given away, which will, we hope, lead them to make more titles available for PDA programs. Looking more broadly at the 200 most used books, 26 were not purchased and of these four had no STLs. These figures indicate that the browsing safeguards protect libraries and ensure that publishers receive payment when their books are used significantly.

Savings from PDA

GVSU found that PDA clearly can present a library with significant financial savings. The PDA model employed allowed the library to make a large number of titles available at a very low cost. That is, the libraries

spent less than $70,000 to make more than $4 million in books available to users. Libraries have always had patrons help to build collections, purchasing titles based on their requests. The EBL model allowed the library to do exactly this while saving more than $480,000 over what it would have cost to purchase all of the "requested" books that saw use over the year. Moreover, unlike the historical model of responding to patron requests, where delays between the request and the receipt of a book are routine, ebooks provide instant access to the user who finds two hours, much less two days or two weeks, an unacceptable wait.

Compared to traditional interlibrary loan (ILL), the costs of PDA are significantly lower. The $6.57 average cost per use for all PDA books accessed was far below the average ILL cost, which for us is $20.00 per title. Moreover, there is no waiting for a book to be delivered from another library, no need to educate patrons on how to use the service, nor are there any forms to fill out. With PDA, users can seamlessly access materials without ever knowing that this is a service for which the library pays. While valid concerns exist about restrictions on loaning ebooks to other libraries, the lower cost and instant access of PDA books call into question the prominent role of traditional ILL as more and more books are available through this kind of model.

In many ways, important as the financial savings that can be achieved from PDA are, the time savings that can be achieved could prove more important. By making the material available to library users in this way, our librarians did not have to take time to select these books, acquisitions staff did not have to place the orders and receive the books when they arrived, cataloguing staff did not have to process the books, and circulation staff did not have to shelve them. Workflow that was required tended to take a fraction of the time traditional selection, acquisition, and processing necessitated. Absent these tasks, librarians and staff were free to spend more time collaborating with faculty, assisting patrons, or focusing on other projects.

Librarian-Selected Versus Patron-Selected Books

Although the number of librarian-selected books was small, it provides interesting insights. More than half of the auto-purchased books were never loaned after they were purchased, yet these books still outperformed the librarian-selected titles. Only 12 percent of the librarian-selected titles were loaned after purchase. And even though only

43 percent of auto-purchased books had loans after purchase, those auto-purchased titles had already triggered three loans, or they would not have been bought.

In addition to loans, significant differences existed in the cost per use between librarian-selected titles and auto-purchased books. The cost per use for the auto-purchased titles was $33 less than the cost-per-use of librarian-selected titles. Part of what increased the cost per use for the latter was that fifteen of the twenty-five librarian-selected titles saw no COUNTER uses.

Changes Made

The analysis of data led GVSU to refine its PDA program. First, we expanded the number of EBL books included in the program during the fall 2010 semester. To do this we added all pre-2005 monographs that met GVSU's profile, bringing the total books in the collection to more than 132,000. To buy those books would cost roughly $15 million. The library budgeted $150,000 for its 2010/2011 PDA program. The rationale was that just under $70,000 had been spent in 2009, and for 2010-2011 we doubled the number of books available. We also expect costs to increase as more books reach the auto-purchase threshold after two years of use.

The library also made some changes to its EBL settings, some of which should save money, while others may cost money. One change that is likely to result in additional costs is the removal of price limits. To control for costs GVSU originally established a maximum STL of $40.00. If the STL of a book would come to more the patron would be prompted to fill out a request form. The library received only a handful of mediated loan requests over the first year, and we allowed every request. The original thinking behind the limits was that an STL is usually 10 to 20 percent of the purchase price of a book, so a $40.00 STL would be for a book that could cost from $200 and $800. Because the library knew encyclopedias and other very expensive reference works are available for use in EBL, the limits reduced GVSU's exposure. An examination of the cost of purchased books and of what would have been the purchase price of books used but not bought showed that our fears were unfounded. Only 59 books that saw any use cost more than $400 and of those only five were purchased. As a result of this analysis, GVSU removed any price limits on STLs. Doing so eliminates the need

for students or faculty to fill out an online form, which undoubtedly deterred some users. It also provides users immediate access to a resource when they want the title. The library will review the use and cost data for the coming year and based on that analysis will determine whether to re-implement price limits.

A second change that GVSU made to its EBL profile was to raise the number of loans required to trigger an auto-purchase. We hypothesized initially that by auto-purchasing books on a third loan GVSU would save money by not having to pay for unnecessary STLs. However, the majority of books had no other loans after auto-purchase, and only 10 percent of books had more than two loans after being bought. Running scenarios to determine cost savings of auto-purchasing books on the fourth, fifth, or sixth loan showed that significant savings were to be had by increasing the number of STLs before purchasing a book. While the $14,000 in savings that would have been achieved by purchasing on the fourth loan was impressive, the nearly $20,000 saved by purchasing on a fifth loan was substantial. Additional savings could have been achieved by purchasing on a sixth loan or seventh loan, but those savings of approximately $800 and $1,600 were not significant, and GVSU felt cost-saving was only one factor to be considered when deciding the auto-purchase threshold. As a result of the study GVSU elected to purchase automatically on a fifth loan.

Areas for Future Study

While PDA has been established as a viable, important component of collection development, the study of PDA using ebooks is relatively new. As a result, many areas of further research and study would benefit libraries.

At GVSU we are interested in examining the effect of adding pre-2005 ebooks to the collection. Will these books be used at the same rate as newer titles, creating a major financial impact, or will use mirror that of print monographs, where older titles in the sciences and social sciences are less likely to be used?

We also need to examine the overall budgetary effect of PDA, both initially and over time. GVSU found that the ratio of used EBL books was similar to the ratio of books circulated and also the ratio of books used in similar ebook collections. We need to determine if this ratio holds and also if it holds for other institutions. As to budgeting for

PDA, it seems to us that the cost of implementing a PDA model such as EBL's would be highest early on. During that period, when a large backfile of books is loaded into the catalogue, high-interest titles would see high use, leading to their purchase. Over time, we expect that titles likely to prove interesting will see enough loans that they will be purchased. Once we own these books, overall expenditures should drop. What will be left are long-tail books of little or occasional interest and newly added titles. Among the new titles we assume that a fairly consistent percentage will be of great interest and that others will enter the long tail. Of course, we need to examine whether this hypothesis holds true. How long will it be before the backlist titles of real interest to our patrons are bought and expenditures level off? What percentage of new titles will be loaned and purchased each year? We are eager to learn answers to these questions.

How ebooks are used is another area to be examined. If ebook use is more concentrated on individual users accessing a book many times over a short period, it could be that one-day STLs are not the most cost-effective solution. Perhaps a seven-day STL would prove more practical and would prevent a book from being borrowed day after day by one user, leading to an unnecessary purchase. The longer STL would cost the library more initially, but in the long term could save money as many books might not reach the point of triggering an auto-purchase.

Additional research on how users react to prompts may help libraries decide how best to implement mediated loans. If asking users to fill out a form is not a significant barrier, mediation may encourage libraries to make more books available and could encourage libraries hesitant about the cost of PDA to give it a try. A study of prompts would also help establish how users react when asked to initiate a loan for a book. We found many books were never loaned. Reasons could be that users determine they do not need a book during the browse period; alternatively, they might be often able to acquire the information they need in that short time without printing or copying and pasting. On the other hand, perhaps many users are confused by the prompt and never receive full access to a title they truly need.

Further study should also help understand how libraries are integrating PDA with traditional forms of collection development such as librarian-selected titles and approval plans. What are the best ways of integrating PDA into slip and approval plans? While some libraries are using slip or approval profiles to select which PDA books to add to their online catalogues, there has been little discussion of how to adjust

traditional print approval plans. Until ebook vendors can provide access to all published materials a need will remain for approval plans of print materials, and even when that apparently distant day comes, some disciplines will remain resistant to the wide-scale adoption of ebooks, especially in the humanities. How libraries and vendors adjust approval plans to take into account PDA will be of increasing interest as more and more libraries begin to implement PDA, which we expect them to do. Likewise, as libraries look to implement PDA programs from multiple vendors, an examination of best practices for merging title lists and managing ongoing de-duplication and loading of MARC records will be essential.

Conclusion

In many ways, patron-driven acquisition has seen a radical change over the past few years even as the core principles that underlay this method have essentially stayed unchanged. Patron-driven acquisition provides libraries with the ability to vastly increase access to information to their constituencies. Rather than purchase materials in anticipation of possible use, PDA allows libraries to make materials available at the point of need. What has changed is the ability of libraries to take advantage of technology to acquire and make available the materials users want in a way that is instantaneous and seamless.

While vendors and libraries are still developing and experimenting with business and use models, our study suggests that ebook PDA may offer libraries opportunities for transforming collection-development practices and achieving significant cost savings. Given the nature of how ebooks are used, access through loans instead of purchases seems a better model for providing users with more robust, rich collections within constrained budgets. Since most ebooks are only accessed once or twice, it makes sense to pay a fraction of the list price for loans at the point of need, thereby stretching limited library resources.

To fully embrace the opportunities that ebook PDA provides, libraries should consider letting go of some of the traditional collections controls. If PDA titles tend to be used at a higher rate than printed books, and the number of materials accessed through ebook catalogues tends to mirror the rate of use in traditional collections, it may be time to accept that the quality of these materials is as good, or better than those selected by librarians. Shifting book collection dollars toward

PDA and away from selector purchases seems to offer significant advantages, especially in libraries where the focus is on developing collections that meet the current needs of their user populations. For these libraries, while PDA may never completely replace traditional forms of collection development, the continued growth of ebook catalogues and the emergence of print-on-demand technology suggest that PDA may soon become the predominant form of collection development.

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