All About Demand-Driven Acquisition[1]
MSU Libraries eResource and Emerging Technologies Summit 2012

Keywords: demand-driven acquisition, academic libraries, e-books

Abstract
This paper reports on a talk delivered at the Mississippi State University Libraries

eResource & Emerging Technologies Summit (LEETS). The author introduces the

concept of Demand-Driven Acquisition (DDA) for e-books and explains how it works.

The author discusses predicting and controlling costs, as well as other implementation

decisions. Finally, the author discusses the possibility of removing books from a DDA

program and speculates on some of the effects of DDA on libraries and scholarly

publishing.

Introduction
First, a jargon note: In this paper, I will use the initialism "DDA" instead of "PDA" to refer

to this phenomenon. PDA already stands for "Personal Digital Assistant" (although that

usage is fading) and Public Display of Affection (unfortunately still with us). As to what

the 'A' stands for, I tend to use "Demand-Driven Access" and "Demand-Driven

Acquisition" interchangeably. The choice of words really depends on whether you

perceive the end goal as Access or Acquisition.

Since this paper concerns DDA as an *economic* model, I would like to take a moment to

address and then set aside the pros and cons about e-books *in general*. I will only

return to these points when something about DDA makes a difference.

Advantages of e-books include:

- 24/7 access

- Off-campus access

- Full-text searching within/across books

- No lost books

- Shelf space saved

- Multi-user (sometimes)

- Easier e-reserves

- Faster acquisitions turnaround

Concerns regarding e-books include:

- Single user (sometimes)

- (Some) patrons prefer print, especially for cover-to-cover reading

- Compatibility with devices such as tablets

- Short download periods

- DRM and limits on printing, copy and paste

- Complicated interfaces and variability among interfaces

- ILL restrictions

So why should a library consider DDA? It goes back to the oft-cited use studies [2] that concluded that many books on academic library shelves never get used. At Wake Forest University, I ran a rather crude analysis of the circulating collection and concluded that roughly 50% of the books have not circulated since local collection of circulation data began in 1991.[3] Furthermore, considering only the books that circulated, 36% circulated exactly once. It is reasonable to argue that the money and labor spent on the non-circulating book were completely wasted. For the books that circulated once, the cost-per-use is the full price of the book, plus processing costs, shelf space costs, etc. In both cases, there are also opportunity costs e.g., what other useful book *was not* bought.

A demand-driven model solves several of these problems and also offers other opportunities. First, you can expose patrons to many more books than you could otherwise offer. You only pay for what is used, or conversely, you do not pay for what is not used. Depending on how you budget for the DDA program, you may also save selector time. (I will discuss that point further below.)

How DDA Works
The details I am about to share vary slightly among providers, but the following steps are generally true.

First, choose a provider (or two). Make the metadata for the e-books discoverable in your catalog and/or your discovery service. Once patrons find a book, the first few minutes of use are typically free. With some providers, you pay a small fee for the first

several uses beyond the free period. This is sometimes called a "Short Term Loan" or STL. After a certain amount of uses (the "trigger"), the book is automatically purchased at full price. Subsequent uses are free, or rather, included in the full price.

As of this writing, the four major providers of DDA services are:

- Ebook Library (EBL)

- EBooks on EBSCOhost

- Ebrary (ProQuest)

- MyiLibrary (Ingram)

All four providers aggregate works from other publishers. Other players may enter this market. For instance, publishers may start offering DDA on their own platforms.

Predicting & Controlling Costs

The paramount concerns with DDA for many libraries are the costs and the risk that the demand for e-books will outstrip available budgets. Early adopters often cited costs that seem incredible to smaller or less well-endowed institutions.[4] Wake Forest University was also concerned about this issue. Wake Forest librarians hypothesized that the size of the institution plays a huge role in the amount of use (and therefore cost) that a DDA program would generate. When WFU was considering starting a DDA program with EBL, EBL kindly provided some data from other customers. {Ed: Insert Table 1 here.}

After controlling the data for FTE, I calculated what the cost at WFU would be if the WFU experience were identical to the other school.[5]

As you can see, one school (School F) was a clear outlier with a high use per FTE. Other than School F, there were two clusters of per-FTE costs in the $3-7 and $13-14 ranges.[6] It is important to note that the number of visible titles did not have a significant impact on the per-FTE cost. Perhaps the schools with smaller numbers of titles visible did a better job of weeding out titles that would not have been used anyway.

Your per-FTE costs may be higher if your institution has a large distance education program or if you include popular-level books. Also, take into account that, over time, the number of triggered purchases may increase as uses accumulate. The WFU experience shows that triggered purchases do indeed increase as time goes by. {Ed: Insert Table 2 here} Table 2 shows the count of triggered purchases during the first 16 months of the DDA experience at WFU. Most of the four-month segments include some natural high- and low-use times, e.g. finals and vacations. The pattern shows a steady increase regardless.

A library can take several other steps to control DDA costs. One is to set a price ceiling, i.e., books more expensive than your ceiling are excluded from the program. Another variation on this idea is to require that loans or purchases of books over a certain price must be approved ("mediated") first by a designated librarian. You can also restrict the program to particular subject areas that are a high-priority at your institution. As I

mentioned before, weeding out titles that are unlikely to be used will probably not save any significant amount. Wake Forest does not offer agriculture, but nevertheless permitted these books in the DDA program. The reasoning is that these titles are unlikely to see any use. If the odd agriculture title is used, paying a short-term-loan fee is cheaper and faster than using Interlibrary Loan.

Other Implementation Decisions

There are several other decisions that your library may have to make while implementing a DDA program. Some providers allow the library to choose the auto-purchase trigger. Some providers may also allow the library to set a default length of a short-term loan. (Generally, a longer loan length comes with a higher per-use cost.) You need to decide what types of books to offer and exclude. You also need to decide whether and to what extent you will duplicate your print collection and e-books you may have purchased through other mechanisms. (In the Wake Forest experience, automated de-duplication of print was abandoned after realizing that e-book records only provided e-ISBNs while print book metadata only provided p-ISBNs.) Finally, you must decide whether a librarian will mediate loans and purchases.

Wake Forest librarians tried to determine the optimal trigger from the perspective of minimizing costs. It was expected that a short-term loan would cost about 20% of the purchase price of the book.[7] If the STL indeed costs 20% of list, then making a purchase is effectively placing a bet that the book will have at least five additional uses, since short-term loan expenses generally do not count toward the ultimate purchase of the book. Likewise, if an STL costs 10% of list, then a purchase is a bet that the book would be used ten more times. As mentioned above, it is known from circulation data for

the print collection that a very few books circulate frequently with a much larger percentage circulating exactly once. Therefore, WFU set the trigger at the sixth use. Actual use over the first 16 months of the program validated this concept. {Ed: Insert Table 3 here.} During this time, 2,224 books had at least one loan, and 67 purchases were triggered (at sixth use).

WFU began a title-by-title purchasing plan with EBL before launching DDA. That option continues to be available for selectors. So far, however, the use patterns of these books are not an improvement over print books ordered in a just-in-case model. Of 322 firm-ordered books, 279 (87%) had not been used as of July 2012.[8]

One important step when launching a DDA plan is to choose the parameters controlling which e-books will be available to users. In a print approval plan, it is important to whittle the plan down to the titles that are most likely to be used. With a DDA plan, there is no financial downside to providing non-used books. At WFU, the vendor YBP was used as an intermediary for both the print approval plan and the DDA plan. The print approval plan is 28 pages long and goes into intricate detail about which books to include, exclude or make part of the slip plan. The DDA plan was significantly simpler when it started in 2011. It was three sentences long:

- Exclude LC classes K, R, and some Ts. (This was to avoid a free-rider problem with Law, Medicine and Biomedical Engineering programs that use separately funded libraries.)

- Exclude books with Content Levels: Popular or Juvenile (as YBP defines these levels).

- Price ceiling: $200

After a year of experience in which users spent significantly less than was budgeted, the librarians decided to change the restrictions. The current plan is simply:

- Exclude books with Content Levels: Popular or Juvenile

Workflow Considerations

When launching a DDA plan, your staff needs to adapt to new or changing workflows. You will need a person (or people) to

- Upload initial batches of records and periodic updates

- Acquire, pay for and catalog triggered titles

- Mediate loans (if you choose to mediate)

- Assess, evaluate and adjust.

You should also consider administrator (back-end) access for staff in ILL, E-reserves and Reference for on-the-spot activations and purchases.

As mentioned above, a book vendor such as YBP can act as an intermediary for your DDA program. You would especially want to consider this option if any of the following applies:

- You have complicated subject profiling or other parameters.

- You are using two or more DDA providers, especially if you want to rank and de-duplicate between them.

- You want to de-duplicate with other e-book access (firm-ordered, Big Deal, subscription) brokered through the same vendor.

- You prefer their cataloging.

It is a good practice to have an easy way to identify the DDA records in case you should discontinue participation in DDA and need to remove/suppress the records easily. Therefore, at Wake Forest, DDA records and purchased books are cataloged with different location codes. At WFU, many people on staff also felt they might need to determine whether any given e-book is a purchased book or a DDA book. Many of these staff (especially Reference and Instruction staff) do not have access to the back-end display in the Voyager ILS. At the same time, librarians did not want to include any language in the catalog records that would be off-putting to potential users. Therefore, for DDA books, the MARC 856|z is "Electronic Book DDA." {Ed: Figure1 and Figure 2 go here.} Librarians at WFU assume users will overlook the meaningless (to them) three-letter code, while initiated staff have an easy way to tell the difference. Figures 1 and 2 show how this distinction appears in the VuFind discovery layer. Figure 1 shows a DDA title, while the book represented in Figure 2 has been purchased.

Eventually you may wish to selectively remove books from your DDA program. There are several good reasons to do this. For instance, individual books may have been removed from the program by the provider/publisher. In this case, the provider will usually provide a way to identify and remove the records easily. You may also wish to remove books that have been superseded by a subsequent edition. This is to avoid incurring extra short-term-loan costs spread across multiple editions instead of concentrating loans and purchases on the most recent edition. Unfortunately, to date I am not aware of any method to systematically and automatically identify and remove such books. The third reason to remove books is if your demand exceeds your budget and you see selective removal as a solution.

While all those reasons are worthy, I would like to caution against the idea of removing a book simply because a certain amount of time has elapsed without it being used. With a DDA model, the cost of unused books is effectively zero. Staff time spent identifying and deleting unused books essentially adds to the cost of the book. On July 30, 2012, I checked the use of the WFU DDA program. On that date, eight books had been used. Seven of them were used that day for the first time, and four of those had been discoverable in our catalog since the first day of DDA 16 months prior. How you receive this anecdote might reveal whether you are an optimist or a pessimist. The pessimist would worry about the economic risk of leaving books in the catalog. The optimist would rejoice that these four books finally found their reader.

Another caution against deleting unused e-books is the potential for collection imbalance. Any demand-driven plan will skew the collection in favor of the interests of the moment. As time passes and interests change, you would want the older books that reflect the newly trending interests to be available for your patrons to discover.

Effects of DDA

I want to close by speculating on the possible effects of DDA on the larger collection. First, I would like to reflect on existing purchasing plans. For instance, should the library remove likely DDA books from approval shipments? Perhaps DDA becomes the approval plan? Even if neither of these events occurs, how does DDA change selector behavior? As a selector for several subjects, I currently choose not to buy a book if a DDA version is also available. The upshot of that in the current climate is that it takes longer for me to spend the same amount of money because I must manually eliminate the items from my list. This situation, if magnified across many selectors and many libraries, provides a perverse incentive for a publisher not to participate in DDA, especially if that publisher has fared well in the approval-based marketplace of yesteryear. The contrary force comes from budget cuts that would not permit a library to maintain current monograph funding levels and also provide a DDA program.

Speaking of budgeting, when cuts come, the library must decide whether to protect DDA or something else. DDA has a clear advantage over some other types of purchasing, in that one can clearly demonstrate that the content is used. On the other hand, if budgets remain steady, and if DDA turns out to be cheaper on a per-FTE basis than just-in-case purchases, would the savings from DDA enable different types of

purchases? If a DDA program provides most of the Anglo-American major publisher content, then the remaining monograph budget could perhaps be repurposed for smaller imprints, foreign materials and primary source databases.

One must also consider the effects of DDA on Interlibrary Loan. On the borrowing side, does access to more books reduce requests for newer US/UK monographs? Before the talk, I tried to get an answer to this question out of our ILL system (ILLIAD) and discovered that it is not currently set up to elegantly produce the report I needed with the appropriate level of granularity. Perhaps further research is needed in this area. On the lending side, DDA titles are not a good candidate for lending (the license may indeed prohibit lending, but in any case why pay-by-the-drink for another library's patrons?). However, if DDA becomes ubiquitous across many types of libraries, it may not matter since the titles would not need requesting in the first place.

Finally, one must consider potential impacts on publishing and scholarly communication. Can publishers adjust from the current approval-dominated market to a primarily DDA-based market? What would be published in a mostly DDA future? Finally, the concern has been raised that a ubiquitous DDA market would make libraries more homogeneous.[9] I am not concerned about that last point as long as they are homogenous because every library has everything. Homogeneity is a greater concern if DDA for mainstream Anglo-Americana swallows up the entire monograph budget in the same way that Big Deal journal purchasing models have swallowed up serials budgets and have potentially crowded out smaller and niche journal publishers.

In conclusion, the Demand-Driven Acquisition model shows promise as a way to efficiently serve patron needs. With careful planning and budgeting, DDA can be a feasible project for schools of many different types and sizes. If DDA becomes the default model for academic book purchasing, there would be considerable benefits as well as new concerns for libraries and scholarly publishing.

Captions for Tables and Figures

Table 1: One Year of Per-FTE Expenditures for 13 of EBL's Academic Customers

Table 2: Count of Triggered Purchases at WFU by Four-Month Segments

Table 3: Count of E-books Used at WFU by Frequency of Use

Figure 1: A DDA E-Book in the Public (VuFind) Discovery Layer. Online Access Reads "Electronic Book DDA"

Figure 2: A Purchased E-Book in the Public (VuFind) Discovery Layer. Online Access Reads "Electronic Book"

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[1] Carol Joyner Cramer, MSLS, is the Head of Collection Management at Wake Forest University. Box 7777 Winston-Salem, NC 27109. cramercj@wfu.edu

2 One significant early study was Allen Kent and University of Pittsburgh, Use of Library Materials: The University of Pittsburgh Study, Books in Library and Information Science, V. 26 (New York: M. Dekker, 1979).

[3] My cursory examination did not control for factors such as the acquisition date of the book, hence the appellation 'crude.'

[4] Susan Macicak and Lindsey E. Schell, "Patron-driven, Librarian-approved: a Pay-per-view Model for E-books," Serials 22, no. 3 S1 (Nov2009 Supplement): S31–S38.

5 The FTE for WFU was exactly 7000 at the time of the study.

6 The data does not control for variables such as choice of trigger point or firm-order spending also done by that school.

7 Our actual experience was 10% of the purchase price on average, but we did not know that at the time.

[8] This analysis also does not control for date added. Eventually the non-use rate for traditionally purchased e-books will likely resemble the non-use rate for print.

9 Dan Hazen, "Lost in the Cloud: Research Library Collections and Community in the Digital Age," Library Resources & Technical Services 55, no. 4 (October 2011): 200.