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STREAMLINING THE MATERIALS LEDGER TO REFLECT THE REALITIES OF CAMPUS DEMOGRAPHICS, COLLECTION USE, AND THE INCREASE IN E-RESOURCE EXPENDITURES

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ABSTRACT

In 2008, American University Library underwent a reorganization that included the merging of the Technical Services and Access Services Divisions into a single Information Delivery Services Division. Within this new division, reorganization continued over the next year, most notably with a redistribution of print serials work throughout the division that enabled the creation of an Electronic Resources Management Unit. This process of reorganization shifted staffing from the traditional emphasis on print materials to a new emphasis on electronic materials and placed a new urgency on adding technology to the workflow. This shift in attention and staffing brought to light the need to perform the same reorganization on the most basic acquisitions tool – the materials budget ledger. The need to evaluate the ledger was also necessary in the context of responding to changes within the academic needs of the campus. The University's FTE had been steadily growing over the past decade with significant resources dedicated to certain Schools and Departments on campus, and it was unclear how well the current ledger and budget were representing those needs. An analysis of the decade old materials ledger structure involved a mapping of allocation codes, collection use, and past expenditures by format to campus demographic data coded by discipline, as well as a close look at the nature of e-format purchases, all in the interest of restructuring the ledger along broad fund categories that were in line with the new workflow processes and funding sources.

Introduction

At American University Library, the materials budget ledger had not changed significantly since the last Integrated Library System upgrade to Voyager in 1997, but, by 2008, many changes had taken place for the Library.

Some of these changes were external. The University's programs had gone through a great deal of change between 2001 and 2008¹, including the discontinuation of four PhD programs in the College of Arts and Sciences (CAS) to strengthen the undergraduate experience; expanded programs in the Kogod School of Business; and an increased emphasis in the areas of International Studies (SIS) and Public Affairs (SPA), primarily focused on building Master's and PhD programs and creating professional certificates and training. The College of Arts and Sciences went through the most restructuring over the nine-year span. Beyond cutting PhD programs in Sociology, Chemistry, Education, and Statistics, several other departments were combined, notably the union of the Health Studies and Education and the grouping of Physics, Audio Technology and Computer Science into one department. The School of Communication (SOC) had the least change in that time and maintained a steady FTE.

¹ Although the ledger data was available from 1997 forward, the circulation and university enrollment data was only available from 2001 forward, so we have narrowed the scope of the project to this window.

The increased emphasis in International Studies is particularly interesting because it brought the FTE of the School of International Service nearly up to the level of the entire College of Arts and Sciences. As can be seen in the graphic below, the number of programs in CAS are numerous, especially when compared to the other schools. This can make discipline-based allocations in the materials budget difficult, especially when some of the largest programs such as International Service are fairly interdisciplinary.

A second external change was that of the usage patterns of the Library users. The increasing availability of electronic materials caused a dramatic shift in what kinds of materials

users gravitated towards – there was a significant decrease in print usage and corresponding increase in electronic usage.

In addition to external changes, the Library had a number of internal changes. In 2008, the Library underwent a reorganization that included the merging of the Technical Services and Access Services Divisions into a single Information Delivery Services Division. Within this new division, reorganization continued over the next year, most notably with a redistribution of print serials work throughout the division that enabled the creation of an Electronic Resources Management Unit. This process of reorganization shifted staffing from the traditional emphasis on print materials to a new emphasis on electronic materials – a response to the rapid growth in spending on electronic resources that had been taking place in recent years and the need for improved access to and management of these resources.

These internal and external changes brought to light the need to rethink the most basic acquisitions tool – the materials budget ledger – both in terms of structure and general allocation. It needed to undergo a thorough analysis for how well the spending by subject had accommodated the changes in university programs over the past ten years and reflect the dominance and growing variety of electronic resources. This involved a mapping of allocation codes, collection use, and past expenditures by format to campus demographic data coded by discipline as well as a close look at the nature of e-format purchases, all in the interest of restructuring the ledger along broad fund categories that were in line with the new workflow processes and spending patterns.

Past Ledger Structure

The past ledger structure had been composed of thirteen sections at the summary level (as shown in the image below) that could be divided into three general types: content (approvals, books, media, reserves, serials, and standing orders – the area of focus for this paper), collection maintenance (binding, collection maintenance, and the consortium fees), and specific routes of money input (additional funds, deposit accounts, expensive purchases, and restricted funds).

The content areas were all first divided by subject at the allocated level and then by a more specific format at the reporting level. For example:

- Reserves
 - Biology-09
 - 09R-Book
 - 09R-Multi-media

Print and digital (and other) formats were mixed in together, with the digital format materials found principally in the Books, Serials, and Standing Orders summary level funds, sometimes in unexpected ways:

- Books
 - Biology-09
 - 09B-Book
 - 09B-CAP (a senior-level project)
 - 09B-Ebook
 - 09B-Microform
 - 09B-Multi-media
- Serials
 - Biology-09
 - 09s-CD-ROM
 - 09s-Database
 - 09s-Ebook
 - 09s-Ejournal
 - 09s-Microform
 - 09s-Print
- Standing Orders
 - Biology-09
 - 09O-CD-ROM
 - 09O-Database
 - 09O-Ebook
 - 09O-Print

This mixing was due to the fact that each summary fund for the content areas belonged to either the Acquisitions unit or the Serials & E-Resources unit, with both units purchasing print and digital formats (Serials & E-Resources purchasing much more digital content than Acquisitions). For these summary funds, Acquisitions was in charge of the Books and Standing Orders funds, and Serials & E-Resources was in charge of Serials.

Finally, many of the fund codes that were present in the past ledger had become obsolete by 2008. At the reporting (third tier) level, for example, some formats were no longer used, such as the CAP or Microform funds within the Books section. At the allocated (second tier) level, some of the subjects were no longer assigned funding as the University programs no longer existed in the same way.

Challenges with the Past Ledger Structure

Issues with the content areas of the past ledger fell into two major categories: a shifting of spending priorities and the growth of electronic format types.² The past ledger had clearly been constructed in a day when print was dominant. Due to the rapid increase in spending, attention, and complexity to the digital formats being purchased by the Library, the ledger no longer fit the current workflow and needs for these materials.

Over the past decade, spending on e-format materials such as databases and electronic journals increased steadily. As can be seen in the chart below, the percentage of the total budget that was spent on e-format materials went from under 10% in FY99 to approximately 60% in FY09. This included a significant increase in FY07 when electronic expenditures outpaced print expenditures for the first time, largely due to the 2006 serial subscription cycle in which a sizable portion of the collection was transferred to electronic-only subscriptions.

² There were also a number of challenges related to the routes of money in and out of the ledger and how total expenditures were accounted for, but that is beyond the scope of this particular paper.

Just as the spending in e-format materials grew, the complexity of tracking and managing these materials grew. For example, digital collections are sometimes “leased” and sometimes “owned,” but the past ledger did not have a mechanism for showing the difference. The “owned” collections created difficulties in that they were often large, one-time purchases with ongoing fees for perpetual access. In the past ledger, these continuing costs had been tracked on the serials side much like individual journal titles are tracked, but they would likely function more clearly as part of the Library’s overall collection maintenance expenditures.

E-book acquisition was particularly problematic in the past ledger structure, causing a variety of accounting challenges. For years, the Library represented aggregator e-book acquisitions much like database subscriptions, but this did not allow for an itemized accounting based on subject funds. Individual e-books were seen as a format alternative for print books, so that a collection manager could choose to spend their “book” allocation per subject on either print books or e-books. While this was a logical choice in some ways, it also caused the electronic purchases to be buried within the past ledger in what was traditionally a print format summary fund. Individually purchased e-books are monographic purchases, making them more compatible with the Acquisitions unit’s workflow, but they are an e-format, making them more compatible with the Serials & E-Resources workflow.

Moving from print to electronic-only journal subscriptions posed issues in terms of e-journal package acquisition for collections like Project Muse, Project Euclid, and the e-Duke Scholarly Collection. Subscription costs are not itemized out by title – instead, they are represented as database expenditures. This becomes problematic as the connection to the historical data for the print subscriptions of titles now part of the electronic-only package is lost.

Responding to Programmatic Changes

The changes to University programs and the changes in trends of usage had brought into question whether or not the allocations had been effectively adjusted to reflect these changes. In order to better understand the past trends, data was gathered from a number of sources: EagleData (the University’s database for university enrollments) for undergraduate and graduate student enrollment, the ledger for historical expenditures, circulations of books by call number ranges, and COUNTER Journal Report 1a. usage reports from publishers for e-journal usage. All of these areas were mapped to the same set of subjects and determined for the FY01-FY09 time period except for e-journal usage, which was only available for 2006-2008.

Three areas of interest were selected (representing five sample programs) to examine the relationship of expenditures and usage more closely.

1. Examination of a program that had gone to zero enrollment: Computer Science had experienced an overall dramatic decrease in student enrollments, going from 197 students in FY01 to zero in FY08 and 09.
2. Examination of the effect of graduate programs: Marketing had experienced a decrease in graduate enrollments, Education had experienced an increase in graduate enrollments, and Art had maintained a steady graduate enrollment.
3. Examination of a program of high significance: The School of International Service is the University's largest program, making it of particular interest, and it had increased in total enrollment by 157% from FY01 to FY09. This program is also of interest because it is an interdisciplinary program. Interdisciplinary programs are a challenge to allocate for because materials purchased for them benefit and cross over with many other disciplines.

Focus on Computer Science: Decreasing enrollment

As can be seen in the charts below, enrollment in the Computer Science program bottomed out very quickly after FY06, while print expenditures only had one significant drop after FY01.

The cost per use does seem to reflect the consequences of maintaining the same expenditures with steadily dropping enrollment – from FY06 through FY09, the cost per use was over \$20.

There is also the factor of preferred format – it is likely that print books about computer science topics were less desirable as more e-format materials became available. Electronic journal use of computer science materials did climb rapidly from 2006-2008, as seen in the chart below, and the spending on e-format materials for computer science rose steadily over the past decade. This increasing interest in materials purchased for a program that was on its way out could reflect the general, increasing interest in technology across the disciplines.

Focus on Graduate Programs

Although the relative numbers are very different among the three programs being examined for changes in graduate enrollment, the trends are clear. Education experienced a boom of graduate students, Art stayed approximately the same, and Marketing had a distinct drop.

Print expenditures for these areas were highly variable over this time period for Education and Art, with Art having high expenditures relative to the enrollment, possibly because of the high cost per book for art-related materials. Marketing print expenditures experienced the same trend as the enrollment.

It is interesting to see that although the cost of Marketing materials was relatively less, the cost per use for Marketing print materials is the highest in all years but one when compared to these other programs. It is also interesting that the Education print cost per use closely reflects the pattern of the expenditures. This is because although the expenditures experienced large fluctuations, the usage remained around the same with a slight downward trend. While the enrollment of Art has been very stable, the print usage has not – it has decreased over the years. This has resulted in a higher cost per use in recent years.

Electronic expenditures, however, rose for each of these subject areas with a steep increase after FY05. Education went from relatively slow and conservative electronic acquisition to a marked shift in FY06. While Marketing is not a formal degree-granting Master's or PhD program, electronic resource acquisition in support of this subject area jumped from zero expenditures in FY01 to over \$20K in FY09. Art, a department on campus notoriously reticent to access scholarly resources electronically, also experienced a profound increase in FY05 because of the acquisition of ARTstor.

An examination of electronic journal use for core subscribed-to titles bought on these subject funds revealed that while electronic material spending for Art was increasing, licensing efforts were focused on database access versus journal access. There are no recorded uses for current electronic journals bought on the Art fund from 2006 to 2008. This in combination with the relatively low cost/use for print materials does provide evidence that the Art department's reluctance to use electronic journal formats can be justified. For Education and

Marketing, two different developments are at play. Use of electronic journals bought on the Education fund did increase as the expenditures for electronic Education resources increased. With Marketing, however, there was a drop of almost 50% in use of subscribed to electronic journal titles bought on the Marketing fund. This is the same time period the University saw a decrease in graduate students enrolled in a Marketing program at the Business School. Adjustments to electronic spending in Marketing were not made - instead, electronic expenditures in Marketing increased alongside other subject funds.

The School of International Service, already a large portion of the University, grew steadily from FY01 to FY09 to over 2500 students.

In that same time period, monographic expenditures had grown and then decreased, having peaked in FY06.

The cost per use of monographic materials rose and stayed relatively high, the pattern paralleling to a certain extent the expenditures. Increases in enrollment and the interdisciplinary nature of the program can help explain the comparatively generous expenditures as there were wide-reaching demands on the resources purchased within this subject fund.

Electronic journal use of core subscribed-to titles bought on the SIS fund demonstrates a swift shift in preference for electronic journal content. From 2006 to 2008 use more than tripled from 4,122 article downloads to 14,819 article downloads. This trend parallels the enrollment increase throughout the decade.

Electronic expenditures overall within the SIS subject fund increased from FY01 to FY09 and outpaced monographic spending by almost 75%. The increase in FY07 can be accounted for in large part by the shift to electronic only journals, but SIS was also a school where the acceptance of electronic formats was embraced in a more steady fashion than other subject areas.

Proposed Ledger Models

Based on the examination of spending, formats, and usage, there were a number of principles we used to approach adjusting the ledger:

1. The allocations should be balanced along the factors of usage and FTE, and, as much as possible, the structure should facilitate quick evaluation of spending by subject.
2. The ledger should provide a clear format divide between print and electronic, and broaden the scope of electronic formats.
3. Only funds in use should be kept in the ledger.

We created four potential models for reworking the content side of the ledger: one model that focused on the subject, one model with a focus on the primary split of format (print, electronic, etc.), one model that attempted to combine the best qualities of the first two models, and one model that was simply a general expansion of the serials portion of the ledger. All models broadened the electronic side of the budget in some way, adding such top level areas as ebooks, databases, and digital collections. These models, to varying degrees, make an attempt to separate the one-time purchases, such as approval books, from continuing purchases, such as ejournals, as these kinds of materials are handled differently in the budget cycle.

The first model, as shown below with Anthropology standing in as a sample subject, gave the subject primary attention. It was organized with each subject at the summary level, general formats at the allocated level, and specific formats at the reporting level. It would allow for a very easy comparison of total spending across the disciplines.

- Anthropology
 - Approvals
 - Books
 - Databases
 - Digital Collections
 - EBooks
 - EJournals
 - Media
 - DVD
 - VHS
 - Microfilm
 - Print Serials
 - Reserves
 - Print
 - Electronic
 - Standing Orders

The second content model focused on the primary split of format (print, electronic, etc.). Reserves is kept separate as it is the one area of the budget that involves requests from teaching faculty members instead of from collection managers. It could easily be reversed at the second and third tiers for a different effect.

- Electronic
 - Anthropology
 - Databases
 - Digital Collections
 - EBooks
 - EJournals
- Media
 - Anthropology
 - DVD
 - VHS
- Microfilm
 - Anthropology
- Reserves
 - Anthropology
 - Print
 - Electronic
- Print
 - Anthropology
 - Approvals
 - Firm Orders
 - Serials
 - Standing Orders

The third model was a blending of the first and second, giving subjects primary attention but grouping similar formats together.

- Anthropology
 - Electronic
 - Databases
 - Digital Collections
 - EBooks
 - EJournals
 - Reserves
 - Media
 - DVD
 - VHS
 - Microfilm
 - Print
 - Approvals
 - Books
 - Reserves
 - Serials
 - Standing Orders

The fourth model focused on broadening the format categories for electronic materials, separating these materials out in a way similar to how print materials had been handled in the past ledger structure.

- Approvals
 - Anthropology
- Databases
 - Anthropology
- Digital Collections
 - Anthropology
- EBooks
 - Anthropology
- EJournals
 - Anthropology
- Media
 - Anthropology
- Microfilm
 - Anthropology
- Print Books
 - Anthropology
- Print Serials
 - Anthropology
- Reserves
 - Anthropology
- Standing Orders
 - Anthropology

Conclusion

Ultimately, changing the ledger structure and the allocations is a larger conversation to be had with the entire Collection Management Team. What has been done so far has been a general cleaning of the ledger, including the elimination of over 135 obsolete fund codes, and a preliminary streamlining of formats, such as the removal of e-format materials from the Standing Orders fund. Closer attention to usage and population served, the rising demand for electronic materials, the decreasing use of print materials, and the need for the ledger to effectively adapt as e-formats continue to grow and change are areas of concern as we move forward toward a more final solution to our ledger structure and corresponding allocation strategy.