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Adapting to Scarcity: Developing an Integrated Allocation Formula

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Abstract: Rising costs for library materials and shrinking budgets make it more necessary than ever for academic libraries to target their scarce resources to meet the specific needs of academic programs. The authors surveyed other institutions to determine current practices in the allocation of library materials funds in different formats. The results of our survey were inconclusive, which led us to combine monographs and continuations in a single allocation formula. By crafting an allocation formula for both monographs and continuations in print and electronic format, the Cunningham Memorial Library at Indiana State University hopes to satisfy the growing demand for information services.

Keywords: Allocation formula, Library budgets, Library funds for academic disciplines

INTRODUCTION

Rising subscription fees and growing enrollment. Shrinking materials budgets and reduced personnel. How do we serve the university and fulfill our mission as an academic library in the 21st Century while confronting all these challenges? How do we allocate library resources judiciously? How do we manage the collection when disparate departments have dramatically different needs? These are the questions that we constantly asked ourselves while working together at the Cunningham Memorial Library at Indiana State University (ISU). ISU is a medium sized public institution that is classified as a Doctoral Research University in the Carnegie system. Like many other academic libraries, the ISU Library has relied on a historical allocation method in recent years to determine how the library spends its materials budget. Essentially, each year's budget is merely a modification of the previous year's budget, while individual expenditures of both monographs and new continuations are made on an ad-hoc basis. The library assigned a set amount of annual money to each department for monographs. Money for serials and continuations came out of a general pool; new acquisitions depended upon expending any remaining funds at the end of each fiscal year. Although the library's collection development committee holds final responsibility for collection development, subject specialists place orders after they gather input from academic units on campus. The library attempts to gather information about the university's information needs and tries to be as fair and judicious as possible in its decisions. Librarians gather anecdotal evidence and use their informed judgment to make decisions, but the library has gathered neither qualitative nor quantitative information about university programs systematically or consistently.

Ad-hoc decisions are less problematic when budgets are increasing. As budgets plummet, one might foresee a time when the library allocates money based upon a complainant's decibel level. These decisions could lead our colleagues in the university to look upon the library as arbitrary, if not capricious. Systematic allocations of resources are becoming critical to a successful relationship with campus. Yet the political implications of finding an effective means to allocate resources are not limited to monographs. Some units on campus, especially business and the sciences, tend to emphasize serials. Under a traditional allocation, these departments might unnecessarily spend money on unneeded monographs only because the money is in the budget. Libraries no longer have such luxuries.

While the ISU library needs to take many steps to address these problems, we recently investigated the use of an allocation formula to target our scarce resources. Recognizing that the library provides a variety of materials to support specific academic disciplines, we wanted to also examine the effectiveness of an integrated allocation formula that divides the materials budget by academic unit without regard to format. The library may thus strategically spend the apportionment for every academic unit as best suits their unique needs without the constrictions of fixed funds on books, newspapers, microfilm, serials, or databases. No formula can or should replace sound judgment, but if quantitative evidence is to be used routinely anyway, then it is arguably more efficient and more equitable to so systematically. The problem is to synthesize the best solution locally from a search of best possible practices of the library's peers.

LITERATURE REVIEW

Librarians have long sought the means to expand their collections while effectively and equally representing individual departments or colleges. Kitti Canepi analyzed 28 select formulas from an original sample of 75 to find statistically significant elements and the degree of correlation for each component. While she concedes that "precision is elusive, because libraries seek to measure by proxy what they cannot measure directly," Canepi recommends that the following four elements be included in allocation formulas: "enrollment/number of students, cost/price of materials, use as measured by circulation, and number of faculty." While stressing the importance of the four elements at minimum, Canepi is careful to suggest that allocation formulas must be crafted to meet the unique needs of particular institutions. Including additional elements or variables in the allocation formula may be necessary for some purposes (Canepi 2007).

Another method for allocating funds for library materials is simply for the library to award the same percentage of its budget to an academic unit as its parent institution does, e.g., if the university awards Department X with 10% of its overall funding for academic units, then the library should award 10% of its material budget for use by Department X (Genaway 1986). Of course, some libraries will still create separate funds for general reference, special collections and other purposes. Other institutions have implemented variations of this model in recent years.

The Swirbul Library at Adelphi University recently implemented the Percentage Based Appropriation (PBA) method for their fiscal year 2004/2005 for monographs and Debbi Smith published their results. The Swirbul Library first separated general or non-departmental funds from departmental funds. Five percent of the Departmental funds were then set aside as a

contingency fund. Determining how much the library should spend by percentage was dependent on a calculation of how much money the university spent annually on each academic department. Grants, gifts, and other miscellaneous support were omitted. Some disciplines, mostly arts and humanities, were already close to formula, but the sciences were well above formula. Changes in spending were introduced gradually while exceptions such as the School of Social Work were given extra funds due to an expansion in the curriculum. Smith concluded that any formula was arguably a guideline, rather than a strict rule, and the process of collection development was more art than science (Smith 2008).

Anne Kaay and Peter Zimmerman discussed their experience at the University of Windsor using a modified PBA method for monographs. Again, funds for reference materials and other special purposes were first separated out and then the remaining funds were divided by academic department by percentage. They tested a number of different variations that included the following variables: undergraduate population, graduate student population, faculty population, use of the collection, and average book price. Different percentage weights were given to each variable with the largest being 35 percent for undergraduate population and 40 percent for use of the collection. Kaay and Zimmerman stressed that extension of the formula beyond monographs was problematic due to rapid change in serials subscriptions and extensive use of packages (Kaay and Zimmerman 2008).

Charles Guarria of Long Island University adapted the allocation formula developed by Lyndon State College in Vermont in 2008. Selected criteria included: number of courses, student credit hours, faculty FTE, average book price, and the number of majors/concentrations/degree seekers. While Lyndon College reserved 10 percent of their

budget for discretionary spending, Guarria did not. Implementation of the formula Long Island University was to take place in two stages with 50 percent allocated by formula in the first year, and 100 percent in the following year. Long Island University restricted the use of its formula to monographs and found some significant disparities between the formula and historical spending, most notably in the arts (Guarria 2009).

Attempts have also been made to apply more rigorous statistical methods to allocation formulas for library materials. William Walters has suggested the use of regression analysis for departmental funds. Formulas may unintentionally incorporate arbitrary or non-relevant variables. By using SPSS, MINITAB, or other statistical software packages, librarians can find more appropriate weights for variables in their allocation formulas to produce a more equitable balance across departments (Walters 2007). Eric Wu and Katherine Shelfer have recommended that allocation formulas be subject to a formula fitness reviewwhich uses statistical methods to determine “goodness of fit” for each variable. They urged greater consistency in the definition and use of mathematically precise variables with statistically predictable relationships. Wu and Shelfer found that some of the data used as the basis for the allocation formula at Baruch College City University of New York was invalid. Sampling different populations was problematic for the calculation of average book price due to inconsistencies among major publishers in defining disciplines or genres. FTE faculty was not uniformly reported by academic units at Baruch College while the student FTE was a lagging indicator with data that was 36 months old (Wu and Shelfer 2007). Williams and Schmidt evaluated the effectiveness of using the Bowker Annual, previous acquisition cost data, Blackwell Price Reports, and Blackwell approval plan profiles to determine the average cost of a book. Each tool had advantages and disadvantages,

especially relating to the currency of data and staff time requirements in generating a useful analysis. Not surprisingly, no one method was perfect (Williams and Schmidt 2008).

Terrence Paris describes how Mount Saint Vincent University has recently attempted to move from a more traditional allocation formula based on 24 academic departments to a new model based on five discipline fund groups: humanities, social sciences, sciences, educational studies, and business studies. Allocations for electronic databases were separated out while the new funds based on cognate disciplines were extended to serials and monographs with a single library liaison for each fund group. The university has accepted the new fund groups and liaison assignments. Attempts to modify the allocation formula itself, e.g., replacing a calculation of the average internal cost for books with benchmarks for book and periodical costs taken from external sources, was rejected by the university faculty in their governance bodies (Paris 2007).

Among the more radical innovations is Holistic Collection Development (HCD) developed at Saint Xavier University in Chicago. HCD assumes that collection development should be driven by curriculum, agnostic in regards to format, organized to eliminate inefficiency, reflective of the university's educational priorities, and subject to annual review. Access and service are stressed over ownership with the assumption that electronic resources will be emphasized increasingly at the expense of print resources in order to meet user expectations. James Kusik and Mark Vargas argue against complex allocation formulas due to the need for flexibility and transparency, and instead argue for the allocation of library materials to particular disciplines based on Faculty FTE. Notably, subject specific databases, electronic and print serials, and monographs are all subject to the same formula, thus making HCD one of the

most inclusive formulas for electronic resources currently mentioned in the literature (Kusik and Vargas 2009).

SURVEY OF PEER INSTITUTIONS

Like many libraries nationwide, the Indiana State University library has a smaller budget in 2011 than it did in 1997. The number of personnel has also dropped by one third. Subscription fees for most databases increased by three to five percent every year. On the positive side of the ledger, the university saw a greater than ten percent growth in its enrollment in the past year. One serious side effect to this growth is the not surprising decision of some vendors to charge higher subscription fees based on student FTE. As ISU nears 10,000 FTE, it will soon find itself in a higher tier or bracket for most vendors. Change is now constant for library materials, especially electronic resources, as vendors for electronic resources introduce new platforms, tools, and services. They change pricing models and fee structures as necessary to increase their market share. They also merge, sell, and take over assets that create additional changes in the type, quality, and cost of electronic resources available. Some accrediting agencies (e.g. American Chemical Society) mandate subscriptions to specific, expensive serials. Consequently, when the library must cancel titles, it has fewer options.

The ISU library canceled print titles if it carried the same title electronically, it cancelled electronic titles with high cost-per-use, andit cut titles covered by large aggregator databases. The library is now experimenting with newer acquisitions methods. It is renting popular materials from a vendor who leases books and DVDs. It is paying for articles only at the time the patron needs the article, as it migrates from a Just-in-Case model to a Just-in-Time model. The library has also implemented Patron Driven Acquisitions (PDA), in which it chooses to

purchase some monographs rather than interlibrary loan them. It has tried a variety of new business models, including group discounts through library consortia, shared collections, and multi-year agreements and special contracts.

Unfortunately, these steps are not enough. The university has increased its enrollment and added new academic programs, which the library must find resources to support. Rapid changes in enrollment, programs, and new faculty require greater precision in targeting scarce resources. In the midst of multiple rounds of budget cuts and cancellations of subscriptions, the library struggled to maintain a focused collection. The library often discussed the needs of programs with somewhat vague references to particular faculty, research projects, increases in enrollment, and other supporting evidence without exact figures. The library must gather that information systematically, instead of anecdotally.

SCOPE

Using an allocation formula will enable library personnel to target spending to serve specific academic programs based on the number of faculty appointments and changes in student enrollment. Assigning funds to specific academic units by percentage share will help to improve decision making in collection development. Rather than adding or canceling materials on an ad hoc basis, library personnel will be able to increase or decrease funding in a systematic way. Budget cuts will no longer fall disproportionately on particular disciplines due to an above average materials cost. The purpose of the survey is to determine if the library is able to leverage similar investigations its peer institutions might have made.

METHODOLOGY

The lead author emailed all of Indiana State University's peer institutions, as determined by several campus agencies. Based upon an investigation of these libraries' websites, he contacted the person most likely responsible for collections—either an Acquisitions or Collections Librarian. He asked the following questions:

1. How do you allocate funds within your library materials budget? Do you have separate funds for different colleges, departments, or subject areas?
2. Do you have separate funds for materials in different formats, i.e., separate funds for print and electronic serials or monographs vs. serials, or do you combine spending for resources in different formats?
3. Do you use any kind of allocation formula to determine how much money should be assigned for a particular college or department? If so, what elements are included in your formula, e.g., current students enrolled (head count or FTE), number of degrees awarded, faculty research activity, or the number of grants received?
4. If you do not use a formula, how do you determine the amount of money that each college, department, or fund (whatever its designation) receives?

Of the 27 peer institutions contacted, 9 provided detailed information within 10 days of the initial email about their current allocation methods for library materials. One respondent preferred the absolute discretion possible in a phone interview. The high refusal rate did limit the impact of the survey, but the constraints of the oncoming budgetary cycle prevented the authors from following up with the non-respondents.

FINDINGS

Eight out of nine respondents continued to allot money based on a historical method, i.e., the current budget was based on the previous year's budget. Of the eight that are not currently using an allocations formula, one library is currently developing one, and three others are considering the use of an allocations formula. Detailed information from their responses is provided in Table 1. The authors did not find enough of a consensus that would define a "best practice." Consequently, we decided to take a slightly different path.

TABLE 1 Results of Email and Phone Survey

Institution	Allocation Formula?	Elements in Formula (Current or Under Consideration)	Description of Allocation Method, if not by formula	Organizational Level for Funds	Fund Types
University A	No	Not Applicable	Historical; Library recommends changes ; Provost approves changes in distribution for Colleges; Deans approve changes in distribution for Departments within Colleges	College, Department	Multiple formats w/in each department: monographs, sets, electronic serials, periodicals, electronic periodicals
University B	Consideration	Faculty headcount, FTE grad students, total credit hours, cost of materials (FTE grad students and total credit hours count double)	Historical; adjusted for price increases and changing priorities	Department	Serials, Monographs
University C	Development	Faculty FTE, graduate student FTE, average journal price, number of journals in a given discipline, level of journal dependence for specific disciplines, *working with University Statistician to craft formula for journals first, will address monographs later*	Historical	The entire collection is divided into core and research collections subdivided by Department	Serials, Monographs
University D	Consideration	*No specific items mentioned*	Historical; simply added or cut as necessary on ad hoc basis	Department	Firm Orders, Approvals, Standing Orders, Periodicals, and Electronic (Databases and

					Journals)
University E	No	Not Applicable	Historical; adjusted for price increases with a strategic fund managed by Admin for new resources and consortial purchases (trend is to cut monographs in favor of serials); changes made based on arguments made by fund managers/selectors	Subject with some large general funds	Serials, Monographs
University F	Consideration	Number of undergraduate Students vs. graduate students, faculty research dollars received by school, *(staff would not elaborate further, but mentioned that other elements were under consideration)*	Graduate and Undergraduate Student FTE	School, Department	Serials, Monographs
University G	No	Not Applicable	Historical; reductions or cuts are made proportionally based on each college's percentage of the total budget	College, Department	Serials, Monographs, Microforms
University H	No	Not Applicable	Historical	Libraries, Divisions, Departments (Purdue seeks to simplify funds)	Serials, Monographs, Instructional Media, Gifts, Cooperative Reference Funds, may create separate Special Collections Fund
University I	Yes	Faculty FTE, number of declared undergraduate and graduate majors, number of credit hours per department, the average cost of monographs in LC subject areas for each department, and circulation statistics for each department by LC subject areas	Formula for Monographs; strategic assessment for serials and other expenditures	Electronic and Print Continuations (journals, databases, electronic reference tools), Reserve Fund, Library Expenditures (reference, archives, special collections, browsing), College, Department	Continuations, Monographs, Library Expenditures

DISCUSSION

REVIEW OF DIFFERENT MODELS

As the library could not find a consensus based upon the survey of its peers, it started with ideas from its peers and the literature review. The lack of consensus further motivated the authors to create additional models for potential exploration. All plans were predicated on a more systematic and annual collection of data about the university and library activities. However, a library that imposes an allocation formula on its university does so at the risk of considerable political capital. The ISU library chose to work with a campus task force, with representatives from every college, to investigate these options. This task force helped develop the final allocation formula that assigns funds based on how well each academic unit addresses the goals of the university. These goals include increasing enrollment, student retention and student success, development and retention of great faculty, and improvement in research and teaching. The library asked the provost to appoint the members from other academic units. Each college sent one faculty member to the task force except for Arts and Sciences, which sent two members. The library asked that one of those two members represent the Humanities and the other member represent the Sciences. The library contributed all five faculty members on its Collection Development Committee, including the library dean. Together, the combined force of 11 faculty members met fourteen times through the 2011 spring semester. The provost charged the task force to recommend by consensus the most appropriate and effective means to allocate funds across campus.

The library ultimately considered the following possible models:

1. Modified Historical Allocation

2. Targeted Program Allocation
3. Integrated College Allocation
4. Integrated Departmental Allocation
5. Divided College Allocation
6. Divided Departmental Allocation
7. Hybrid Allocation

Modified Historical Allocation is essentially the option of ISU continuing as it has in the recent past, but with better data to inform our decisions. Recently, ISU's university administration has emphasized the naming of “Programs of Promise and Distinction” in both its rhetoric and overall financial support for specific academic units. Targeted Program Allocation did not include an explicit allocation formula, but would allow the library to target or allocate additional resources to these academic programs favored by the university. The task force quickly rejected these possibilities, as neither option addresses acute problems, e.g., the ad hoc cancellation of serials titles due to budget cuts, the mismatch of monographic funds to particular programs, and the lack of accountability for spending on packages and electronic databases.

The two Integrated Allocation plans would apply a single allocation formula to monographs and serials in all formats, including databases, while the two Divided Allocation plans would allocate funds separately for all monographs, serials, and databases after the library first decided how much it would like to spend on each general category. The library would allocate funds for the two College Allocation plans at the college level, e.g., the College of Arts and Sciences or the College of Education, before dividing the money further at the

departmental level, while the library would allocate funds for the two Departmental Allocation plans directly to each department. Finally, the Hybrid Allocation would restrict the use of an allocation formula to monographs, arguably the easiest target, while the library would allocate funds for serials and databases by the historical method as in the past.

After examining each of the possible scenarios, the task force determined to try a system whereby the library creates a single fund for each academic unit that can be used to acquire materials regardless of format—an integrated plan. The task force considered Kaay and Zimmerman's advice to limit the application of any formula to monographs because vendors frequently sell large packages of journals that affect multiple departments and are prone to adjust the title list within these packages. However, the task force members agreed that an integrated plan would give each academic unit the greatest flexibility while keeping the allocation as fair as possible. Some departments or colleges prefer to purchase only continuations. Other units prefer to purchase more monographs. Rather than have the former units "waste" their monographic budgetary expenditures on titles they neither needed nor desired, these units can select more continuations. Likewise, the latter units can acquire more monographs in an integrated environment because they are not "wasting" budgetary expenditures on expensive continuations that long ceased any utility. Next, the task force decided that historical relationships between the library and the different academic units necessitated a blend of the college and departmental allocations. As the departments within the College of Arts and Sciences have their own liaisons with the library, the task force requested that the library create separate funds for each department. However, the other colleges did not have individual liaisons for each department. Rather than asking those colleges

to create additional liaisons, the library will create funds for each of these colleges. Thus, Indiana State University chose a blend of the Integrated College Allocation and Integrated Departmental Allocation.

REVIEW OF INCLUDED VARIABLES

After settling on an allocation formula, the task force tested how well specific variables worked and made improvements to the formula with each new iteration. The various allocation formulas depended upon weighted variables to decide how much to spend. The task force investigated a variety of data inputs, including number of students, number of faculty, usage of materials, historical spending, degrees awarded, instructional load, average materials cost, faculty productivity, and research intensity. The task force ultimately recommended four variables—undergraduate student enrollment, graduate student enrollment, faculty FTE employed in each college, and interlibrary loan requests. Each variable is described below.

1) Undergraduate Student enrollment, Declared Major (5 percent) is based on Fall semester enrollment summary data provided by official university statistics. The task force concluded that this data provides a reasonable means of measuring potential student research needs based on the population served at Indiana State University. ISU will use a three-year average in order to minimize the impact of short-term changes in enrollment. Two key aspects to selecting this variable are rather prosaic, but critical to a shrinking library: the data is reliable (no need to verify the accuracy) and the data is easily obtainable (no need to spend hours searching for the data).

2) Graduate Student Enrollment, Declared Major (20 percent) is also based on the fall semester enrollment summary data that the university provides, using a three-year average of the most recent academic years.
3) Faculty Full Time Equivalent (70 percent) was judged by the task force to be the single most important measure of university support for specific academic units at this time. Data is considered to be reliable and can be obtained relatively easily from university central administration or college and departmental administrative units on campus.
4) Interlibrary Loan Requests (5 percent) representing the number of materials ISU borrows from other libraries on behalf of its departments provide a measure of the usage of library services and can also demonstrate the need for greater investment by the library in underserved programs. Library personnel can readily obtain data at the college level.

The task force recommended the specific percentage weights to reflect the assumption that faculty will use research materials more intensively than graduate students. Graduate students are likely to use library research materials more intensively than undergraduate students, especially given the demands of writing theses and dissertations.

REVIEW OF EXCLUDED VARIABLES

The task force considered a number of alternate variables, principally for materials usage and for faculty productivity. However, selecting these variables was problematic principally because of unusable or incomplete data. The library is addressing the former; the task force asked the

university administration to redress the latter. These alternate variables are numbered below followed by a brief discussion.

1) Student enrollment by credit hours instead of declared majors, and 2) Number of degrees awarded: The task force strongly considered Guarria's advice to include student credit hours, and the primary author used the variable during one of his many iterations of running the formula. However, that metric did not add much to the overall results, and the task force decided that number of degrees would suffice. The task force further decided that representations of future research needs based on the number of the population served were more meaningful than measures of research productivity and/or degrees awarded for students.

3) Measures of faculty productivity, 4) Number of grants awarded, and 5) Dollar value of grants awarded: The task force rejected measures of faculty productivity and grants awarded due to conflicting or unavailable data from multiple sources at Indiana State University. The university was unable to provide complete or correct data, most likely due to problems with a recent system used to track faculty productivity. Also, the task force could not agree on any appropriate standards for weighing different types of productivity across the diverse body of academic disciplines. Fundamentally, how does a journal article in the sciences compare with a monograph in the humanities or a musical composition in the arts? When more accurate data becomes available, future task forces or collection development committees might include one or more variables that measure faculty productivity in the allocation formula.

6) Average materials cost and 7) Historical cost share: The task force shared a strong philosophical preference for following Canepi's and Guarria's inclusion of the cost of materials as a key component of the formula. Unfortunately, data for average materials cost is currently

available for monographs or serials treated separately, but not combined. An accurate measure of average materials cost for databases across multiple disciplines does not currently exist. Since the library will assign funds to for monographs, serials, and databases, the task force decided against using the variable of average materials cost at this time. The task force rejected historical cost share because it lacks flexibility and is a symptom of a system that ISU is trying to improve.

8) Usage statistics: Once again, Canepi initially persuaded the task force to include circulation usage within the formula. As with the average cost of materials, the task force felt compelled to eliminate this variable at the present time, as usage statistics are incomplete for some types of library materials. The library currently collects usage data for most electronic resources, as well as circulation statistics for print materials and special collections research activity. The library is working to expand and improve the collection of usage data for all materials, but this process will require considerable investment in staff time, the development of new tools, and may also require additional funds.

9) Research intensity: The task force investigated whether some academic programs at ISU require more research activity than others. The task force did not have the means to investigate and craft appropriate measures of research intensity at this time, but it might be worth future consideration.

ASSIGNMENT OF CONTINUATIONS

Since the library took the task force's recommendation to implement an integrated allocation, the library needed to identify all continuations by college and discipline. Previously, we had a single generic fund code for all serials and another fund code for most databases. The library

organized monographic funds somewhat haphazardly by college, department, and an occasional program such as Women's Studies. Careful examination of the history of each fund in comparison to the current organization of teaching faculty on campus enabled a more organized approach to the monographic funds. The scale of the project required us to work outside the Integrated Library System (ILS). We used notes in the individual cataloging records as the foundation for a spreadsheet of all continuations, which we named the Master Holdings List. We generally included any material that could be identified as some type of continuation, but efforts to improve and correct the Master Holdings List are ongoing.

To simplify our work somewhat, we chose to assign serials titles according to Library of Congress Classification, the description as listed in Ulrich's Guide to Periodicals, and sometimes local evidence in marginal cases such as acquisitions history (the faculty member or department that requested the title originally) or known usage patterns. We assigned databases according to the associated titles in full text and/or indexing of titles in the case of abstract and indexing databases. A database with mostly political science journals would be considered a resource for political science. Some materials—such as EBSCO's Academic Search Premier or ProQuest Research Library—currently serve the needs of more than two academic units, and will remain part of a general, unassigned fund exempt from the allocation formula. Two academic units can pool their resources and share costs to acquire more expensive materials.

PLAN OF ACTION

The library quickly agreed that the initial formula should expire after two years. This gives stakeholders an opportunity to assess and discuss the formula's ramifications without fear that

the library presented a fait accompli. The task force created the following plan of initial implementation:

1. Funds subject to the allocation formula include monies used for non-recurring purchases and continuations in print, electronic, and other formats that are assigned to specific academic units.
2. The library will not apply this formula to the following types of library materials and/or funds: a) materials required for the accreditation of academic programs; b) materials not assigned to specific academic units such as Academic Search Premier; and c) library funds designated for reference materials, special collections, and other interdisciplinary purposes.
3. The library will apply the allocation formula to the five colleges of: a) Arts & Sciences; b) Business; c) Education; d) Nursing, Health & Human Services; and e) Technology over a two-year period and continue in effect thereafter.
4. The library will allocate funds based on the following variables:
    a. Student Enrollment, Undergraduate, Declared Major: 5.00%
    b. Student Enrollment, Graduate, Declared Major: 20.00%
    c. Faculty FTE: 70.00%
    d. Interlibrary Loan Requests: 5.00%
5. The library will not apply the allocation formula to departments within the College of Arts & Sciences, but only to the College of Arts & Sciences as a whole. The percentage share of funds for departments within Arts & Sciences will remain the same in Fiscal Year 2012 as they were for Fiscal Year 2011. Any changes in overall funding for the College of Arts & Sciences will be equally applied to all departments, e.g., if funding for the College were to

decrease by 5 percent, funding for all departments within the College would also decrease by 5 percent.

6. Faculty in the five academic colleges will advise their respective library liaisons as to how they wish to spend allocated funds, with final expenditures subject to the approval of the dean of the library. Faculty may request that funds be spent on materials in any format, but electronic format is strongly preferred due to the university's commitment to distance education and the requirement that library services for distance education students should be equal to those available to other students whenever possible. In addition, the library no longer has sufficient staff levels to accommodate the work required to process print subscriptions. New print serial subscriptions or changing any current electronic subscriptions to print, microfilm or any non-electronic format will be considered only in cases of extraordinary need as determined by the dean of the library.

FACULTY FEEDBACK AFTER IMPLEMENTATION

The library created a task force to ensure we understood the diverse perspectives of our constituents as well as to help obtain buy-in. We were far more successful in the former than the latter. The library used a variety of means to publicize the allocation formula, starting with the members of the task force and the library liaisons. However, individual faculty members who did not serve on the task force were more concerned from their perspective with the fundamental issue of losing a favorite journal. The library dean and the secondary author met with all the chairs of one college to discuss the formula and address specific concerns. Some faculty expressed concern that the formula would unfairly impact small departments'

purchasing power. These departments might have previously used expensive databases that cost more money than they will be allocated under the formula.

The issue of departments not being able to pay for titles currently adds an additional layer of complexity. The library employs a policy of transparency that ensures no continuation is cancelled without notice. Every year, the library has publicized a list of titles that we propose to cancel. Faculty members have one semester to appeal these decisions. Consequently, with very few exceptions, the library continued to receive these titles for one extra year past the decision to cancel. Now that the departments are responsible for choosing to support specific continuations, they have a stronger authority to cancel titles. The library will still place the title on a cancelation list. If another department—including the library—wishes to keep the title, the latter department can assume the financial responsibility. To accommodate this extra requirement, and mindful of Smith's dictum that any formula should be treated as a guideline rather than a cudgel, the library added money to individual units to help pay for all currently subscribed continuations during the first year we implemented the plan. However, the units must cancel titles during the first year in order to stay within the second year's budget. The library further eased the transition by guaranteeing no university unit would lose money from its budget because of the formula during the first year of implementation. Consequently, greatly underfunded colleges (according to the formula) did not receive a huge increase in one year—an acceptable compromise to the formula's utility to help the library achieve a greater level of buy-in from the university.

Faculty members also expressed concern that the library had mistakenly assigned many continuation titles to the wrong academic unit, or even an academic unit at all. Considering the

complexity of the Master Holdings List, the library explicitly asked the faculty to scrutinize the assignment of continuations. Not surprisingly, we made some mistakes, which we quickly corrected. Some faculty members also lobbied the library to move a title from an individual academic unit to the unassigned category. In general, the library acquiesced to these requests. However, once a title falls within the unassigned list, the library becomes responsible for deciding whether to cancel it. If the academic unit then appeals that future decision, that unit can resume the financial responsibility.

As a further practical matter, the library created two funds within our ILS for each college or department. One fund is dedicated to monographs, while the other fund is dedicated to continuations. Since an academic unit must commit to keeping a continuation for one year after it decides to cancel, we created the continuation fund merely to help track the payments. If continuation costs are different than expected, the unit in conjunction with the library can freely move money between the two funds.

Finally, a new task force will start to assess and evaluate the formula's effectiveness after only a year. Considering the expressed concern that the previous members of the task force did not fully represent the various university constituencies, the library has asked the department chairs and deans to name their representatives to the next task force, with the same stipulation on the size of the task force—one member from each of the colleges, with a second member from the College of Arts and Sciences.

CONCLUSION

The library's ultimate decision to combine expenditures for monographs and continuations in a single budget, as well as the choice to select the variable inputs of faculty FTE, graduate student

FTE, undergraduate student FTE, and interlibrary loan borrowing requests were based upon research of other libraries' practices and local faculty preferences. We understand the allocation formula is not perfect, but we hope that the formula will protect critical resources. The library must target scarce resources to support academic programs based on variables that measure what the university values. An allocation formula cannot replace sound judgment, but it should be used to inform that judgment.

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