LIBRARY LEADERSHIP & MANAGEMENT

Zero-Based Budgeting In A Cutback Scenario For A Small Academic Library

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Abstract

This white paper will model zero-based budgeting in a cutback scenario. The paper will open with a literature review of organizational decline, fiscal retrenchment, and zero-based budgeting, "a method of budgeting which requires you to justify all planned expenditures for each of your new business periods" (Small Business Accounting Guide, 2014). The bulk of this white paper will model zero-based budgeting in a cutback scenario using an organizational persona based on the actual budget of a small private academic library. The budget narrative will describe the sequencing of this budget model. A brief discussion of the pros and cons of zero-based budgeting will follow. The paper will conclude with an annotated list of key readings followed by a more extensive list of references.

Introduction

Bozeman (2010), pointing out that executives prefer to think of skill-building in terms of growth and expansion, argues that cutback management is also an essential skill. Leaders in academic libraries need the acumen to respond to fiscal retrenchment as expertly and quickly as possible. All institutions at one time or another face financial reversals of fortune, and institutes of higher education are no exception. Carefully-planned budgets can fall victim to external and internal forces such as declining enrollment, shrinking endowments, steeply rising benefits, fiscal mismanagement, natural disasters such as hurricanes and earthquakes, and even pecuniary crises caused by fraud, such as the private college in Northern California that found itself on the hook for a newly-constructed $15 million science building when the donation for this building turned out to be part of an elaborate scam, ushering in an era of budget cuts and deferred maintenance (Stroud, 2006).

Zero-based budgeting (ZBB) is a budgeting and planning method that among other uses can help an organization programmatically respond to budget reductions. In this budget model, "an organization assumes a base budget of zero dollars each cycle and must justify each program and dollar requested, rather than justifying only those new funds that exceed the prior year's budget base (as is the case with traditional incremental budgeting)" (Kircher & Enyeart, 2009, p. 4). Kircher and Enyeart note that ZBB has value in tying budget justifications to institutional outcomes, and that it is occasionally used in departments where funding can fluctuate from year to year, or with specific programs.

Though managerial leaders in academic libraries may prefer to think otherwise, academic libraries have a high percentage of line items that fit the criteria of being open to

elimination in any budget year. In nearly all academic libraries, some, many, or all of the personnel, whether librarian, support staff, or other category of employee, are not tenure-track, and particularly in non-unionized environments may be at-will employees who require limited justification for reductions in force. Additionally, line items for library materials, collections, travel, training, and technology are highly fungible unless protected by the aegis of accreditation, also making these items well-suited for close analytical review.

A Brief Literature Review

ZBB exists within the wider context of cutback management theory and practice, a topic that flourished in the inflationary crises from the late 1970s through the early 1980s and had a modest resurgence in the recent recession. Bozeman (2010), writing in the related discipline of organizational decline, cites Levine (1978) as a crucial and heavily-cited early article on cutback management and also cites Levine's prolific output in that era as hugely influential, an assessment confirmed by Raudla, Savi, and Randma-Liiv (2013) in their comprehensive literature review of cutback management literature in the 1970s and 1980s.

Though ZBB theory was not new (Pyrhh, 1977; Taylor, 1977), Levine's highly accessible discussions of ZBB and his prolific output in cutback management literature during an era of deep fiscal retrenchment put ZBB front and center for fiscal theorists and managers alike. The intended audience of Levine's 1978 article was public administrators, but Levine was read far beyond that audience at the time, due to the clarity of such observations as "management and public policy theory must be expanded to incorporate non-growth as an initial condition that applies in some cases" (p. 317). Levine (1978) devotes significant space to ZBB as a tactic for helping organizations face decline head-on, arguing that while labor-intensive, ZBB is an important tool for cutback management because it allows "for the analysis of both existing and proposed new activities" and "for tradeoffs between programs or units below their present funding levels," and empowers those at the budget table to rank decision packages (p. 323).

The timing of Levine's focus on ZBB was no coincidence, because President Carter, who had mandated ZBB for state agencies when he was governor of Georgia, mandated ZBB for federal agencies soon after he took office, though it is disputed whether agencies even partially implemented during his administration (Kavanagh, 2012b p. 9). Rubin (1980), summarizing a study of changing decision-making for "five state universities experiencing financial stress" (p. 167), discusses activities that appear similar to ZBB, and concludes that periods of retrenchment force "the explicitness of decision-making criteria" (p. 177), but it is unclear from the discussion how fully-aligned with ZBB these decision-making models were. More recently, Kircher and Enyeart (2009), analyzing four institutions of higher education that reported using ZBB for specific departments, argue that it is impractical to implement ZBB across the board in a university setting, as up to 80 percent of a university budget is consumed by the continuing personnel costs of tenured faculty. Kircher and Enyeart also caution that far from being purely objective, "the validity and reliability of criteria used to rank decision packages will vary with the individual who prepares the decision package" (p. 4)--an observation that loops back to Levine's earlier point that ZBB is a political strategy (Levine, 1978). Despite these concerns—and despite their finding that ZBB is rarely used in university settings--Kircher and Enyeart acknowledge that ZBB is "a rational and objective approach to budgeting that can incent administrators to find cost-effective ways to improve operations" (p. 4).

Library literature follows a similar pattern in which ZBB research flourished in the late 1970s and early 1980s before falling quiescent. Linn (2007), reviewing budget methods used

by libraries, confirms the rarity of using ZBB across entire academic libraries, either back in the Carter era or contemporaneously. Foskett and Brindley (1991) is a rare example of ZBB used library-wide in a cutback-management scenario; the authors conclude that ZBB is labor-intensive and best used for specific departments, but add that using ZBB improved their relations with the campus finance officer and that ZBB had "real practical value" (p. 33). From the early cutback management era, an entire textbook exists on ZBB in libraries (Chen, 1980). This monograph offers a balanced view of ZBB, an outline of its origins, a thorough discussion of the rationales for ZBB and its components, and seven real-world examples of ZBB library budgets across public, academic, private, special, and state libraries, with a mix of ZBB for specific units and ZBB across the library. While the examples in Chen (1980) at first blush appear quaint, with their typewritten decision packages and their emphasis on traditional print-based services, the decision packages appear very similar to contemporaneous examples found in use today, and are useful for getting under the hood of ZBB to watch its engine running in a library setting.

The remaining ZBB discussions in library literature largely fall into two categories: theoretical arguments, and case studies of partial implementations. In a typical example of the former, Sargent (1978) details the steps required to implement ZBB across a library and advocates for its use, arguing that "it is now possible to measure management against goals, performance, and benefits to which they have committed themselves" (p. 33), but does not cite actual cases where ZBB has been implemented. Sargent (1978) also notes that the time commitment can be "overwhelming" and that "is possible to sabotage the effort by ranking pet projects above essentials" (p. 35).

ZBB appears to have been used occasionally in the last four decades for reassessment of specific services such as a ground-up analysis of collections (Chan, 2008; Thompson, Toedter, and D'Agostino, 2005), or evaluation of subunits such as McMaster's business library (Hayton, 1980). Most examples, such as these two, are based on justifying or expanding a service or reallocating funds across a library, versus cutback management. In the case of Thompson, Toedter, and D'agostino (2005), ZBB helped a private community teaching hospital library achieve a journal collection better aligned with organizational learning and research outcomes while navigating the politically tricky waters of journal cancellations, but also saw serial expenditures increase by 15 percent. Similarly, Chan (2008) reports using a modified ZBB in which in consultation with teaching faculty, five percent of the collections budget at the library for Hong Kong University was reallocated, rather than eliminated.

Organizational Characteristics of Vesuvius U

ZBB's complex history as an oft-invoked but rarely-used budget model begs the question: what would a test-fit for ZBB against an actual academic library budget tasked with a mandated cut look like? The authors used data from a real-world university library in an institution facing a ten percent drop in enrollment, its first such drop in ten years of rising enrollment, which has triggered a mid-year mandated five percent budget cut across all university departments, with rumors floating of additional mandated cuts after spring enrollment numbers are finalized. The university's actual identity has been cloaked, but the data are real.

Vesuvius University is a small, private, tuition-dependent university founded in 1868 when six Dominican nuns arrived in California from Washington State. The University offers 25 undergraduate majors and nine Master programs in weekday, weekend, evening, and video-conference classes. VU also serves adult learners. While the culture at VU is to consider the campus largely residential—as it was when it moved to its new campus in 1956—two-thirds of

its student body live off-campus. Degrees offered include undergraduate BA, BS, BM, and BSN; credentials in education; and graduate degrees in MBA, MA, MEd, MM, and MSN. The university was fully accredited in 2005 by the Western Association of Schools and Colleges (WASC), but accreditors cautioned that the campus needed to implement an information literacy program and begin assessing students' performance, a process that began in 2009. The BSN and MSN programs received accreditation from the Commission for Collegiate Nursing Education in September 2002 for ten years, reaffirmed in 2012. The traditional undergraduate racial/ethnic profile is 22% African American; 24% Hispanic; 25% Caucasian; 18% Asian-American/Pacific Islander; 1% Native-American; 3% International; 1% Multi-ethnic and 6% declined to state. Approximately 50% of entering freshman are the first generation in their families to attend college and over 50% qualify for Pell Grants. The six-year graduation rate is 39 percent; a cross-campus enrollment retreat in April 2014 identified the most at-risk students as transfers, athletes, and commuters. VU almost closed in 1998, due to falling enrollment and fiscal issues. After seven or eight lean years, when staff were laid off, services stopped, and tenure and promotion were suspended, the university entered a less-stringent period during which enrollment began creeping toward and then beyond 1,000 FTE, a period that also saw routine incremental increases for most departmental budgets with minimal justification beyond supporting growth.

Library Personnel and Services

The Library is a 15,000-square-foot two-story Midcentury Modern building constructed in 1958; it has had cosmetic improvements but no significant renovation since construction (key indicators and other supporting documents are included in the appendices). The Library is open 77 hours per week during the spring and fall semesters, with extended hours during finals, and 30 hours per week during the summer and during breaks. A thorough building inspection in 2010 deemed the facility structurally sound and seismically safe, though in need of modernization. It is staffed by six full-time professionals (five MLIS, one MITE), 3.0 FTE student workers, and a .35 FTE graduate assistant. The flagship service is a personalized faculty liaison program providing walk-up and virtual research help, customized workshops in information literacy, and acquisitions support. The Library's virtual presence includes an online Ask-a-Librarian service staffed whenever the research help desk is covered and with supplemental coverage; user-mediated resource-sharing through a statewide network and through traditional interlibrary loan (Appendix B: Resource Sharing); numerous service and subject guides; and remote access to over 60 databases and over 85,000 ebooks. The Library provides 40 Windows and Apple computer workstations for student use, an equipment checkout program providing everything from small adapters to iPads and laptops. The library has a small print collection of approximately 50,000 volumes, of which 21,800 were uncataloged as of the Library's December 2013 cataloging census (down from close to 40,000 in 2010) and several hundred popular and instructional DVDs. In 2011 the library deacquisitioned the remaining print serials, microfilm, or microfiche. There are three two-person study rooms, one four-person study room, and one eight-person seminar room, all of which can be reserved online and double as proctoring rooms and in the case of the seminar room, meetings and two or three semester-long classes. Annually, the Library provides approximately 140 hours of information literacy instruction (for 2013-2014, there were 96 workshops) and eight cultural events. Other services include support for entrance tests and exam proctoring, coordinated through the Advising Center, and other campus-wide presentations. The Library Classroom, a 20-seat instruction room with dual-boot iMacs and two projectors, is the only computer-based classroom on campus, and is used over 150 times per year for computer-based presentations by campus departments, information literacy workshops, and class sessions requiring hands-on instruction.

Budget Narrative

The scenario is that VU Library, along with all other university departments, had already absorbed one five percent budget reduction before the beginning of the fiscal year without significant pain by deferring furniture and professional service expenditures and trimming here and there in the operational budget. Then in September, the University Librarian received word from several in the know that VU may not have hit bottom yet, and that based on the quality of students brought in last-minute by Admissions, the melt for fall enrollment and a sluggish spring enrollment are predicted to prompt another round of cuts.

In terms of fiscal decisions at VU, department heads are given latitude to spend over or under line items as long as they stay within budget for the two main categories (operations and personnel), and line items themselves are rarely questioned or changed except for services that are known to increase every year, such as scholarly databases, or when special cases are made. The base funding for the ZBB exercise is a halfway point between the Library's budget after the initial five percent reduction, primarily so that there would still be some areas, such as computing, for which decisions could be made.

As noted earlier, one criticism of ZBB in higher education is that so much of the budget is represented by nondiscretionary expenditures. This is not the case for the VU Library, where library employees are at-will, are not eligible for tenure or faculty status, and are not unionized, and where nearly all contractual services, except the integrated library system, are renewed annually; the ILS contract, negotiated by the UL's predecessor in 2009, expires in May, 2016. However, approximately fifteen percent of the library budget is represented by contractual obligations for scholarly databases that in accordance with the MOU with the statewide consortium need a ninety-day window prior to renewal date to terminate subscriptions. Half renewed on July 1, 2014 but the remaining renew January 1, 2015, so as of this writing (in this scenario, September 2014), it is not too late for the UL to determine if any databases need to be redlined. Utilities were excluded because campus departments do not pay for these services through their budgets.

Rubric and Decision Packages

This ZBB has five decision packages (DP) broken down into 20 subunits called services (see Appendix C, Vesuvius U ZBB Decision Packages). The recommendation model was Accept Alternative (in other words, reduce or eliminate the service); Reject Alternative (keep the service as it stands); and Alternative Under Evaluation. Items are ranked 1-4, with 1 as essential and 4 nonessential. To help budget reviewers see the outcomes of reducing services, each line item has three possible cutbacks at the 25 percent, 50 percent, and 75 percent level (100 percent would represent eliminating the resource). The rubric for ranking these services was based on the University's strategic plan, with additional language from the Library's strategic plan where appropriate.

The following are the seven decision packages (DP) for this ZBB budget with their corresponding service areas (also see Appendix C). As in Foskett and Brindley (1991), the DPs are presented in an order representing how a library would be developed from the ground up. For example, the Admin & IT DP is the first because it is assumed that the very first "hire" for a new library would be the university librarian (though each section also factors in the time the UL spends in managerial leadership).

Vesuvius University Library ZBB Decision Packages and Service Areas	
1. Admin & IT	**Service 1**: Associate director for IT. This is the head of IT, representing her work in IT. **Service 2**: AD for IT - managerial role. The ADIT also functions as the UL in the UL's absence and supervises one employee, so this role was broken out separately (see later discussion). **Service 3**: Electronic Resource Management. One of the research librarians provides this activity for the library, managing the link resolver and ensuring vendors have accurate information. **Service 4**: Public computing. This represents the computers for student use provided by the library. **Service 5**: Leadership & strategic direction. This is the University Librarian, who also has portions of her time spread across other categories.
2. Access Services	**Service 1**: Space for student learning. This is the work effort behind providing a physical space to students for individual and group studying, computer use, and so on. **Service 2**: Circulation systems. This is the integrated library system, the discovery layer (WorldCat Local), and the security system (Bibliotheca RFID – a system the UL inherited). (Also see Appendix A: Circulation and Gate Counts.) **Service 3**: Managerial leadership. This is the portion of the UL's time for providing leadership and direction for this area.
3. Technical Services	**Service 1**: Resource Sharing. This is interlibrary loan and an express consortial resource-sharing network. **Service 2**: Cataloging. Original and copy cataloging for the library's retrospective conversion and copy cataloging. **Service 3**: Supervision. Provided by the ADIT as part of her skill-building for managerial leadership.
4. Research Services	**Service 1**: Walk-up reference. Traditional on-demand assistance for research skills, provided by the regular librarians and an adjunct.

	Service 2: Instruction. The core service of this library, representing close to 100 workshops per year (design, scheduling, outreach, execution, and assessment). **Service 3**: ACQ and weeding. Selection and deselection. **Service 4**: Scholarly materials. The 60+ databases, 85,000 ebooks, 23,000 ejournals, and other tools such as citation management and survey software. **Service 5**: Assessment and marketing. The cost of the tools used for assessment and the annual bookmark librarians and student workers use to communicate services to the campus. **Service 6**: Managerial leadership. The portion of the UL's labor devoted to personnel management in this category.
5. Seated Cost Formula	**Service 1:** Standard issue [equipment]. The furniture and equipment all library personnel receive. **Service 2**: Specialized issue [equipment]. Equipment unique to specific roles, such as cataloging. **Service 3:** Professional development. Training, conferences, and special career development opportunities such as leadership institutes, Immersion, Emerging Leader, etc. (Also see discussion below for an explanation of this formula.)

Discussion

The ZBB analysis conducted for this paper (Appendix C: ZBB Analysis) proved that Kavanagh (2012) aptly uses the word "insight" to describe how ZBB pulls back the curtain on organizational priorities. For VU, the ZBB surfaced latent conversations about the future of VU's library, including its managerial organization.

In DP 1, Service 1 and 2, the library has an associate director for IT who has worked at VU for ten years and is being groomed for a managerial IT role in a much larger institution. Her eventual departure for greener pastures could yield savings in the library's personnel budget by enabling the library to hire an IT specialist with the skills required to maintain systems but not as much experience managing people and complex IT projects. The tradeoff would be less managerial expertise in the institution and to lead statewide projects, but a junior IT person might also feel less frustration at the limitations of the rudimentary campus network operating environment while still providing unique expertise related to library systems, such as integrated library systems, proxy servers, and electronic resource management. Other reductions in DP 1 are more problematic. Survey after survey has indicated that a significant percentage of VU's students, particularly those in endangered retention categories such as first-generation

students, rely on the library's computers (DP 1, Service 4). With two relatively new computer refreshes in other areas, replacement-cycle purchases can be deferred for a year or two, but the library's computer refresh plan cannot lag too long without impacting student learning. Note that the ZBB analysis also illuminates the value of a planned, multi-year computer refresh cycle, which can tolerate fluctuations in fortune with less impact on the mission than refresh cycles where all equipment is replaced in the same year.

DP 2, Access Services, is very simple. Most line items function to keep the doors open and the collections accessible (Service 1, Service 2). Given the emphasis on student learning and the role of the library in providing space for student learning, its three service areas warrant rankings of one—a clear illustration of the ZBB principle of aligning the budget with organizational mission and goals. The unavoidable amount of time dedicated to facilities management, and the forecast expenditures ($15,000), are artifacts of the age of the facility (over 50 years), VU's history of extensive deferred maintenance, and the nature of buildings themselves, which require ongoing attention to stay in good repair and comfortable. As of September 2014, the library had already incurred expenses of several thousand dollars to repair plumbing and electrical wiring, so the smart money is on retaining that line item and only releasing these funds for other use in the last quarter of the fiscal year. While traditional book checkouts are on decline, the library's equipment checkout program and the reserve textbook program justify the annual license for the integrated library system (Service 2), while the discovery layer provides a simple first-look tool for discovery for freshmen learning the research process and masks the cumbersome and aesthetically unpleasant user interface of the online catalog, the seven-year contract for which does not expire until May 2016. The RFID system is an inherited decision which the UL considers overkill, since almost half of all checkouts are for items such as equipment or reserves that do not lend themselves to self-check; the highest circulating item in the library is an Apple mini-DisplayPort VGA adapter (as of this writing, 9 out of 15 adapters are checked out). But the RFID system has its value as a security system for managing library inventory items such as equipment and furniture, and dropping its maintenance plan could force a decision mid-year to switch to barcode-only circulation versus an unbudgeted maintenance purchase.

DP 3, Technical Services, largely did not exist for VU between 1998 and 2009. The high prioritization of these services is a direct result of their being absent for so long, as well as the visible impact their absence—and subsequent restoration--had on library services. DP 3 points up the role of ranking in ZBB. While a key issue with ranking is its subjective nature (Smart, 2004), ranking also allows experienced professionals to bring deep information to the decision process. The short-term impact of reducing or eliminating resource-sharing (Service 1) might be moderate, but over time, a library with a small print collection and undistinguished e-resource collection, that does not also provide interlibrary loan or other forms of resource-sharing, is short-changing its institution's commitment to student learning and scholarly communications. Service 2, which is a .5 FTE cataloging position, may be considered for downsizing in 2018, when the retrospective conversion project is completed. However, at present, this new role is remediating the near-absence of any cataloging activity between 2004, when the library implemented its first online catalog, and 2010, when the new UL moved Service 2 up the priority chain, using the state of the collection—at the time, only half-cataloged—to justify increases in temporary and student labor between 2010 and 2013, leveraging the UL's technical services expertise by using her as supervisor of cataloging. An alternative approach—send the remaining shelflist to a retrospective conversion specialist and outsource any original cataloging—was rejected due to the poor data quality of the shelflist, the poor scholarly quality of the monographs, and the UL's strategy of a weed-then-catalog approach (see DP 4) to right-

size the collection, create more space for student learning, and limit the cost of cataloging to only those items identified for retention.

ZBB could also help move forward the ongoing discussion in the library about the need for a staffed research help desk (DP 4, Service 1). While walk-up research help is a service that is highly prized by the VP for Academic Affairs as well as the librarians and has been argued for by the very low information literacy test scores of VU's students on matriculation, among the different research help services, it ranks twos and threes against the more critical, and more programmatic, information literacy instruction (DP 4, Service 2), with its reach to every freshman and senior at VU, as well as most graduate education and nursing students. Service 2 includes design, planning, scheduling, marketing, execution, and assessment, as well as a small amount of time in which librarians assist teaching faculty with developing curriculum maps, an investment in collegiality and highlighting the value librarians bring to higher education. The assessment model for information literacy is a standard test administered to all incoming freshmen at VU during placement testing plus a rubric-based evaluation of a sampling of capstone papers for ISAC 195, a course all seniors take. Planning and executing the capstone assessment is far more time-consuming than administering a standardized test, but yields very rich information used by librarians and teaching faculty alike that was absent when the library used Project SAILS for its post-test and was not feasible until the library gained its second 1.0 FTE librarian position in 2011.

Similarly, the seemingly-lowly weeding and acquisitions activities (DP 4, Service 3) merit high rankings for their alignment with providing a current collection and creating more space for student learning. In combination with cataloging activity (DP 3, Service 2), this is producing a smaller, higher-quality monograph collection. It is worth noting—again, the role of "deep information"—that most weeding activity takes place when librarians are staffing the research help desk. During their shifts, these busy bees are either assisting students or, as the pace slows, evaluating musty tomes, with a goal for the latter activity of at least one book truck per week, with a three-year average for the weed/retain ratio at 60/40. The weeding activity has helped eliminate 20 percent of the library's shelving, space that was then filled with study tables. Eliminating walk-up research help would glean savings, but deselection would then have to shift to other time periods.

DP 5, the Seated Cost Formula, points up the value of using ZBB not only in cutback scenarios, but also when planning for expansion and fiscally-flush times. The Seated Cost Formula is a combination of actual annual budget expenditures and amortized expenditure forecasts. It is based on a model one of the authors learned when she was a contract library director reporting to the CIO of Region 2 of the United States Environmental Protection Agency. The CIO taught her to model the actual "seated cost" of each employee, a formula that is particularly useful when an institution is in a growth phase, but is useful at all times for predicting and monitoring the cost of personnel, and has the added leadership quotient of ensuring fair allocation of institutional resources and making these allocations transparent to employees. This formula has held up well across several libraries, including VU, where regular FTE personnel have doubled in a four-year period. Parts of this formula do not lend themselves to same-year cuts; for example, it is not possible to extract savings by eliminating one-tenth of a filing cabinet. But most line items can be reduced or deferred, and in some cases, such as personal printers, might even be eliminated to encourage less paper use and lower expenditures on consumables. Also, while no one likes to think about eliminating personnel positions, a smaller workforce requires fewer expenditures across these areas. However, DP 5 is also impactful on employee performance, morale, and retention, particularly given that VU's salaries are 30 percent lower than competing area libraries and that working conditions in VU's aging library are less than

optimal, so the UL tries to retain some resources in DP 5 rather than relying on these "extras" to find reductions. For this scenario, the professional development opportunities (Service 3) have already been trimmed, and may get cut again for this year. However, as the ZBB warns, sustained cuts to this area will affect currency of staff and loss of enhanced human capital—the situation the UL walked into in 2009, when VU's library was ill-equipped to provide state-of-the-art information literacy instruction, despite warnings from the accrediting agency five years earlier that this would be a focal point in the next accreditation cycle.

Ultimately, a tool is only as good as its user. Auerbach and Edmonds (2013a) observe that "the impact of the budget model… depends more on the quality of decision-making than on the inherent strength of the model" (p. 4). Crowe (1982) also cautions that "since most libraries operate as a subordinate unit of a larger organization, the choice of what budgeting structure is to be used is rarely at the discretion of the library," which means a library pursuing ZBB may have to also prepare a traditional budget for submission to administration, incurring an unacceptably high budget workload (p. 50). When an institution is in steady-state, ZBB may be too laborious to implement across-the-board every year, but using ZBB for "occasional comprehensive evaluation" can help fiscal managers maintain "accountability and fiscal responsibility" (Auerbach & Edmonds, 2013b, p. 4). Nonetheless, in the hands of adroit, mission-driven executives, ZBB can help managers through crises and good times by illuminating the alignment, or lack thereof, between expenditures and strategic priorities.

Annotated Key Readings

Chen, C. (1980). *Zero-base budgeting in library management: A manual for librarians*. Phoenix, AZ: Oryx Press.

Chen, a professor and associate dean at the School of Library Science, Simmons College, taught ZBB workshops at Simmons and in other venues, and the author brought a teacher's logic to this excellent book. *Zero-base budgeting in library management* begins with a simple, clear discussion of typical budget processes, then eases its way into the main discussion by noting that ZBB helps managers answer "difficult questions" (p. 12). While library services have changed radically since this book's publication, the discussions of ZBB in library settings holds up well, particularly since half the book is taken up with actual decision packages in academic, public, and special libraries, as well as a state library agency.

Kavanagh, S. (2012a). ZBB is back. *Public Management, 94*(3), 14-17.

This four-page article is an even-handed, high-level executive summary of ZBB by a researcher for the Government Finance Officers Association who has written extensively about finance in government functions. (Two pages are consumed by illustrations.) Kavanagh notes that ZBB is having a resurgence, and that in 2011 more than 44 percent of government entities in the United States reported considering ZBB for at least part of their budget process—but also notes that textbook adoption of ZBB continues to be "extremely rare" (p. 16). Kavanagh poses three questions to ask before adopting ZBB: what is it replacing, what performance data is available, and does the organization have the capacity to support ZBB. Kavanagh concludes that ZBB is "not for everyone," and offers three alternatives in brief: priority budgeting, program review, and target-based budgeting. A good first article to hand to a provost or dean who has returned starry-eyed from a conference insisting on immediate adoption of ZBB across the university. See Kavanagh (2012b) in the reference list for a longer version of the same article.

Pyhrr, P. A. (1973). *Zero-base budgeting: A practical management tool for evaluating expenses*. New York: Wiley.

Pyrhh did not invent ZBB; Burrows and Syme (2000) trace its origins to 1892, and follow the thread of its development throughout the twentieth century. But Pyrhh was the ZBB guru President Carter relied on to launch ZBB at the state and then the federal level, and his book is still the standard handbook for this budget model. The writing is at times stilted and sexist—Pyhrr evidently believed all accountants are male—but this book has outsize historical significance, and is still a good first look at ZBB.

Conclusion

A library administrator with extensive fiscal experience recently observed that "ZBB will forever change your perspective and approach to budgeting even if you never do another ZBB document" (R. Dugan, personal correspondence, October 31, 2014). ZBB is time-consuming, and as noted in the earlier discussion, may be doubly time-consuming in an academic library setting where in most cases the university is using another budget model and the ZBB functions as a learning exercise rather than an actual budget proposal. Nevertheless, even as an academic exercise, there is much to learn from the effort to align the library budget with institutional priorities combined with the professional discipline required to fairly rank every service area based on its true worth to the institution. For Vesuvius University, this exercise not only surfaced areas of reconsideration, but also helped articulate justifications for potentially-vulnerable services that will be useful talking points in future budget cycles. Performing a ZBB analysis on at least one segment of the library budget in every academic cycle would provide continuous assessment of library expenditures, services, and priorities, and would contribute to an agile and aware organization.

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Appendix A: Circulation and Gate Count

Key Indicators - FY July 1, 2013 - June 30, 2014														
Circ														
	July	August	September	October	November	December	January	February	March	April	May	June	Year End Totals	
Type														
AV	1		2	10	8	3	6	8	8	8	3		57	
AV Equip	12	14	26	39	41	30	24	45	32	62	25	3	353	
Cables	9	27	107	134	190	102	71	128	112	203	62	12	1157	
Cam Acces				9	4	3	3	1	10	1	2	2	35	
Camcorders	1		2	9	7	3	3	1	9	2	2	2	41	
Edcurr			9	8	6	2	2	2	1	2	1			
Edutest	1		5	40	16	1	11	30	32	43	4		183	
Eresource													0	
Facdvd	1		12	13	4	1	3	15	11	9	5	3	77	
Faclaptop													0	
Freserve	5	30	370	265	179	95	162	197	103	137	59	3	1605	
Games	1	5	7	5	3	5	4	7	7	11	17	5	77	
IPAD	5	4	1	4	3	1	3	6	2	6	2	2	39	
K12-Edu	4	7	19	8	14	3	7	32	12	9	5	8	128	
LIBCOMPUTE													0	
LIBLAPTOP	3	11	22	33	55	26	15	43	22	35	17	10	292	
Musicbook										1			1	
New-Book													0	
Noncirc				2									2	
Reserve	2		32	28	16	5	9	28	15	7	1	3	146	
Ref-Book				5	3	7		1	2				18	
Staffequip													0	
Standard	69	146	246	264	208	133	152	246	162	212	126	113	2077	
Video	9	20	19	7	4	7	20	50	33	28	31	17	245	
TSCLaptop													0	
Uknown													0	
Total Checkouts	123	264	879	883	761	427	495	840	573	776	362	183	6566	
Total Renewals	50	36	120	194	150	108	68	114	147	188	82	83	1340	
Total Both	173	300	999	1077	911	535	563	954	720	964	444	266	7906	
Door Count	3032	4956	7602	(missing data)	8394	4491	4901	6589	5899	7950	9094	3405	66313	

Appendix B: Resource Sharing

There was essentially no resource-sharing activity between 2001 and 2010. When the Library resumed interlibrary loan, it also joined a statewide express lending network of libraries providing two-day access for returnables (tangible media).

Vesuvius U., ILL and express lending combined yearly totals

Borrowing

	2010-2011	*2011-2012*	*2012-2013*	*2013-2014*
Returnables	164	283	463	714
Non-returnables	22	46	123	161
Total	186	329	586	875

Lending

Returnables	46	108	155	129
Non-returnables	0	0	0	0
Total activity	232	437	741	1004

Appendix C: ZBB Analysis

Admin & IT: the AD for IT plans, specifies, purchases, deploys, and manages all public and staff computers; manages the ILS and proxy server; monitors the link resolver; helps plan the library's strategic direction; supervises technical services; serves as the UL in her absence. The UL provides managerial leadership for the university library, supervises all regular FT employees except tech services and all adjunct librarians, and represents the library at Faculty Senate and university events. This section also includes allocated time for ERM, managed by one librarian. Materiel in this area are primarily public computers (staff equipment is included in the seated cost overhead formula).

									Proposed Budget Alternatives		
Service 1: Associate director for IT	**DP Code**	**Type fund**	**Cost**	**Qty unit**	**Qty**	**Total**	**Description**	**Rank***	**25%**	**50%**	**75%**
AD for IT - plan & systems	ADIT	Pct Salary	$65,000	FTE	0.7	$45,000	Strategy, maintenance of all computer systems and ILS	1	$ 34,125.00	$ 22,750.00	$ 11,375.00
AD for IT - plan & systems	ADIT	Pct Benefit	$27,000	FTE	0.7	$18,900	Strategy, maintenance of all computer systems and ILS	1	$ 14,175.00	$ 9,450.00	$ 4,725.00
	ADIT Total					$63,900			$ 48,300.00	$ 32,200.00	$ 16,100.00

A--Consequences if activity eliminated? Loss or degradation of IT infrastructure: computer, ILS, wireless.

B--Alternative ways of performing same activity at reduced cost? Outside contractor offering limited and remote services.

C--Can activity be reduced? With campus IT as is, the library requires a very strong, dedicated support and leadership person in place.

D--Recommended alternative--or not? Alternative rejected.

E--Alignment with University Strategic Plan? Develop a culture of technological competence; utilize innovative technologies to enhance the learning experience.

									Proposed Budget Alternatives		
Service 2: AD for IT - managerial role	**DP Code**	**Fund type**	**Cost**	**Qty unit**	**Qty**	**Total**	**Notes 1**	**Rank**	**25%**	**50%**	**75%**
AD for IT - managerial leader	ITAUL	Pct Salary	$65,000		0.2	$13,000	Second officer for library	2	$9,750	$6,500	$3,250
AD for IT - managerial leader	ITAUL	Pct Benefit	$27,000		0.2	$5,400	Second officer for library	2	$4,050	$2,700	$1,350
	ITAUL Total					$18,400			$13,800	$9,200	$4,600

A--Consequences if activity eliminated? The library would have limited decision-making capacity in the IT area and less managerial competence overall.

B--Alternative ways of performing same activity at reduced cost? UL would assume more of the ADIT's role.
t

C--Can activity be reduced? Not in the area of IT leadership, but other managerial activities can be dialed back.

D--Recommended alternative--or not? Alternative under evaluation.

E--Alignment with University Strategic Plan? Enhance our campus-wide commitment to services.

									Proposed Budget Alternatives		
Service 3: Electronic Resource Mgmt	**DP Code**	**Fund type**	**Cost**	**Qty unit**	**Qty**	**Total**	**Notes 1**	**Rank**	**25%**	**50%**	**75%**
Research librarian (1) - ERM mgmt	ERM	Pct Salary	$50,000	FTE	0.05	$2,500	Maintain link resolver for e-resources	2	$3,750	$2,500	$1,250
Research librarians (1) ERM mgmt	ERM	Pct Benefit	$27,000	FTE	0.05	$1,350	Maintain link resolver for e-resources		$2,025	$1,350	$675
	ERM Total					$3,850			$5,775	$3,850	$1,925

A--Consequences if activity eliminated? Loss of access to library e-resources.

B--Alternative ways of performing same activity at reduced cost? E-resource management is not easily outsourced.

C--Can activity be reduced? ERM is performing the minimum activities required to keep e-resources functional.

D--Recommended alternative--or not? Alternative rejected.

E--Alignment with University Strategic Plan? Increase student understanding and use of learning resources.

									Proposed Budget Alternatives		
Service 4: Public computing	**DP Code**	**Fund type**	**Cost**	**Qty unit**	**Qty**	**Total**	**Notes 1**	**Rank**	**25%**	**50%**	**75%**
Computers for student use	PPCs	5-year Av	$30,000	FTE	1	$30,000	Refresh cycle for fixed and mobile public computers.	2	$22,500	$15,000	$7,500
Supplies	PPCs	5-year average	$5,000	FTE	1	$5,000	Cables, adapters, computer security hardware	1	$3,750	$2,500	$1,250
Computer furniture	PPCs	5-year average	$20,000	FTE	1	$20,000	Desks and chairs	3	$15,000	$10,000	$5,000
	PPCs Total					$55,000			$41,250	$27,500	$13,750

A--Consequences if activity eliminated? During peak usage, students without mobile computers will be unable to use computers for schoolwork

B--Alternative ways of performing same activity at reduced cost? Encourage campus to adopt tech fee for students so all have laptops.

C--Can activity be reduced? The Windows computers and Apple laptops are already old; they can be excessed. 10 iMacs, purchased in the 2014 budget cycle, and 20 dual-boot computers in the library classroom, purchased in 2013, can continue to support student needs.

D--Recommended alternative--or not? Alternative accepted

E--Alignment with University Strategic Plan? Increase student understanding and use of learning resources.

									Proposed Budget Alternatives		
Service 5: Leadership & strategic direction	**DP Code**	**Fund type**	**Cost**		**Qty**	**Total**	**Notes 1**	**Rank**	**25%**	**50%**	**75%**
UL - supervision	UL	Pct Salary	$96,000		0.1	$9,600		1	$7,200	$4,800	$2,400
UL - supervision	UL	Pct Benefit	$27,000		0.1	$2,700		1	$2,025	$1,350	$675
UL- strategic direction	UL	Pct Salary	$96,000		0.8	$76,800		1	$43,200	$28,800	$14,400
UL - strategic direction	UL	Pct Benefit	$27,000		0.8	$21,600		1	$12,150	$8,100	$4,050
	UL Total					$110,700			$64,575	$43,050	$21,525
	Grand Total					$251,850			$173,700	$115,800	$57,900

A--Consequences if activity eliminated? Lack of cohesive programs, IT infrastructure, physical improvements and enhancements for student learning.

B--Alternative ways of performing same activity at reduced cost? Pieces of this may be parceled out, but w/o an overarching plan, silos grow.

C--Can activity be reduced? Depending upon the needs of the campus at-large, a small portion of the Director may be shifted.

D--Recommended alternative--or not? Alternative rejected.

E--Alignment with University Strategic Plan? Increase acceptance of diversity, technological innovation, community engagement and resource stewardship.

Access Services: provides support for space for student learning (individual and group study) and for circulation services (checkouts, returns, producing reports, managing users, procedures, fine management, etc.)

										Proposed Budget Alternatives		
Service 1: Space for student learning	**DP Code**	**Type fund**	**Rate**	**Qty unit**	**Qty**	**Total**	**Description**	**Rank***	**Note**	**25%**	**50%**	**75%**
Student labor	Space	Labor/hour	$10	Hours	4000	$40,000	Provides 80 percent of the labor that keeps the facility open.	1		$30,000	$20,000	$10,000
Student worker supervision - HAS	Space	Pct Salary	$42,000	FTE	0.5	$21,000	Hiring, training, scheduling.	1		$15,750	$10,500	$5,250
Student worker supervision - HAS	Space	Pct Benefit	$27,000	FTE	0.5	$13,500	Hiring, training, scheduling.	1		$10,125	$6,750	$3,375
Circulation management - HAS	Space	Pct Salary	$42,000	FTE	0.3	$12,600	Reports, fines, procedures, etc.	1		$9,450	$6,300	$3,150
Circulation management - HAS	Space	Pct Benefit	$27,000	FTE	0.3	$8,100	Reports, fines, procedures, etc.	1		$6,075	$4,050	$2,025
Facility Mgmt - HAS	Space	Pct Salary	$42,000	FTE	0.2	$8,400	PM for maintenance, new projects, etc.	1		$6,300	$4,200	$2,100
Facility Mgmt - HAS	Space	Pct Benefit	$27,000	FTE	0.2	$5,400	PM for maintenance, new projects, etc.	1		$4,050	$2,700	$1,350
Facility Mgmt - UL	Space	Pct Salary	$96,000	FTE	0.1	$9,600	PM for maintenance, new projects, etc.	1		$7,200	$4,800	$2,400
Facility Mgmt - UL	Space	Pct Benefit	$27,000	FTE	0.1	$2,700	PM for maintenance, new projects, etc.	1		$2,025	$1,350	$675
Maintain facility	Space	5-year Av	$15,000	FTE		$15,000	Furniture, whiteboards, repairs, etc.	1		$11,250	$7,500	$3,750
Supplies	Space	5-year Av	$2,000	FTE		$2,000	Whiteboard cleaner, safety supplies, etc.	1		$1,500	$1,000	$500
Heating, lighting	Space	Total	$0	FTE	0	$0	Assumed by university.	OTH		$0	$0	$0
	Space Total		$347,010	FTE		$138,300				$103,725	$69,150	$34,575

A--Consequences if activity eliminated? Deterioration of user experience and increased challenges during information seeking and accesssing resources.

B--Alternative ways of performing same activity at reduced cost? Shift work from students to librarians = increased costs; managerial / student intern to take on management.

C--Can activity be reduced? Student worker hours could be eliminated for low-use periods.

D--Recommended alternative--or not? Alternative rejected.

E--Alignment with University Strategic Plan? Increase student understanding and use of learning resources; utilize innovative technologies.

										Proposed Budget Alternatives		
Service 2: Circulation systems	**DP Code**	**Type fund**	**Rate**		**Quantity**	**Total**	**Description**	**Rank***	**Note**	**25%**	**50%**	**75%**
Integrated library system	CircSys	Annual fee	$17,000		1	$17,000	Pricing set in 7-year contract, signed May 2009	1		$12,750	$8,500	$4,250
Discovery layer (WorldCat Local)	CircSys	Annual fee	$5,000		1	$5,000	Provides user-friendly UI for library collections	1		$3,750	$2,500	$1,250
RFID system maintenance	CircSys	Annual fee	$5,100		1	$5,100	Item management and security system, + 2k new tags per yr	2		$3,825	$2,550	$1,275
	CircSys Total		$27,100			$27,100				$20,325	$13,550	$6,775

A--Consequences if activity eliminated? Lack of collection management and access to resources.

B--Alternative ways of performing same activity at reduced cost? There are many different types of ILS systems, Discovery layers and security.

C--Can activity be reduced? Most costs are encumbered. The ILS system and Discovery system have been paid for, but the RFID system could be eliminated

D--Recommended alternative--or not? Alternative under evaluation for RFID system; ILS and Discovery to be investigated prior to contract sunsetting.

E--Alignment with University Strategic Plan? Increase student understanding and use of resources; stewardship of resources.

										Proposed Budget Alternatives		
Service 3: Managerial leadership	**DP Code**	**Type fund**	**Rate**		**Quantity**	**Total**	**Description**	**Rank***	**Note**	**25%**	**50%**	**75%**
UL - supervision	Leadership	Pct Salary	$96,000		0.05	$4,800		1		$7,200	$4,800	$2,400
UL - supervision	Leadership	Pct Benefit	$27,000		0.05	$1,350		1		$2,025	$1,350	$675
	Leadership Total		$123,000		0.05	$6,150				$9,225	$6,150	$3,075
	Grand Total					$171,550				$133,275	$88,850	$44,425

A--Consequences if activity eliminated? Oversight, direct report, vision and budget issues.

B--Alternative ways of performing same activity at reduced cost? Not at this time.

C--Can activity be reduced? Perhaps, but not likely with current bare bones staffing.

D--Recommended alternative--or not? Alternative rejected.

E--Alignment with University Strategic Plan? Increase student understanding and use of learning resources; stewardship of resources

*** Rank code**

1 - 4, with 1 as highest priority. SC = sacred cow (do not touch for political reasons). OTH = other reasons for not cancelling (e.g. contractual obligation).