Activity-Based Costing in User Services of an Academic Library

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ABSTRACT

ACTIVITY-BASED COSTING (ABC) IS A NEW COSTING METHOD that is rapidly gaining favor in service organizations. The rationale for using ABC in a library is the same as for other organizations; to allocate indirect costs to products and services based on the factors that most influence them. This paper discusses the benefits of ABC to library managers and explains the steps involved in implementing ABC in the user services area of an Australian academic library.

INTRODUCTION

The financial environment in which Australian universities operate is presently undergoing major changes. A reduction in funding by the Australian federal government and competition from other institutions for diminishing resources has created a political climate in which universities are being pressured to attract external funding to maintain infrastructure and courses previously funded by government. Students are being forced to contribute more of the funding towards their degrees. This is leading to greater expectations for quality services and a demand for more online resources to be provided by university support areas, such as the library, which further increases university costs. Escalating costs, diminishing resources, increased competition from other universities, and demands from legislators and the public for greater service and accountability are forcing university administrators to consider more effective management of resources and costs than has traditionally been the case. This phenomenon is not confined to Australia, but also concerns universities in the United States and Great Britain (Council of Aid to Education, 1997; Mitchell, 1997). The pressures currently

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facing universities are not unlike those encountered by manufacturing organizations, a decade ago. The manufacturing sector responded by developing new tools and techniques for measuring and allocating costs, while in the process gaining a better understanding of costs and cost behavior. Cost systems in the service sector are largely borrowed from the manufacturing sector and many service organizations followed their lead, adopting similar techniques to help with the management of costs. This has not been the case with educational institutions, which still maintain traditional fund-based accounting systems. However, things are changing, with recent studies being undertaken in Australia and overseas to examine the application of activity-based costing (ABC) in higher educational institutions (Ellis-Newman, Izan, & Robinson, 1996; DETYA, 2001). While full implementation of ABC in an Australian university has yet to occur, it is starting to take place in overseas universities (Tatikonda & Tatikonda, 2001).

Traditional accounting systems in universities focus on the budget, which is designed primarily as a means of demonstrating to external agencies how 'efficiently' the institution manages its resources. Decisions are often based on how new activities will affect faculty or staff workloads with little consideration given to the actual cost of providing services. If costs are considered, it is often only the incremental or short-term costs, with little consideration given to long-term indirect costs which may be considerable. Activity-based costing is a much more useful management tool for university managers as it provides information about the costs of providing services and what causes those costs to be incurred. Activity-based costing provides managers with information that enables them to make informed decisions concerning the optimal allocation of resources so that activities that are nonvalue-adding can be discontinued and resources shifted to activities that provide the most value to the university.

This paper discusses activity-based costing in the context of library operations at an Australian university; specifically at Edith Cowan University (ECU) in Perth, Western Australia. The paper discusses the benefits and limitations of ABC and illustrates the application of ABC to the user services area of the Churchlands campus library at ECU.

Activity-Based Costing

Activity-based costing is a new management accounting tool that has rapidly gained favor in practice. It was originally developed by Cooper & Kaplan (1988) and used in the manufacturing sector in response to dissatisfaction with traditional management accounting techniques that rely on volume-based methods for allocating overheads to product. Cooper & Kaplan (1988) argue that ABC provides a more accurate product cost than traditional cost methods because activities, not production volume, cause costs to be incurred. Activity-based cost systems collect costs to functional cost pools and then allocate these costs to products on the basis of activity-

cost drivers. The generators of costs are called cost drivers and cost behavior is caused by variations in activity volume. An activity is defined as an event or task undertaken for a specific purpose (Horngren, Foster, & Datar, 2000). Examples of activities to be found in a library include material accessions, cataloging, loans processing, and the shelving of library materials (see Figure 1, page 340, for a more comprehensive list of activities). Activity cost pools are the accumulation of all overhead costs involved in the processing of each activity cost driver. The cost pool may be a very general accumulation, such as aggregating all costs involved in user services into one cost pool, or it may be more detailed so that each separate activity carried out in user services has its own cost pool. Aggregating all user services costs into one cost pool will greatly reduce the accuracy of the measured service costs, as the majority of activities in user services are driven by different cost drivers. For example, the cost driver for interlibrary loan costs is borrower requests received from other libraries and campuses, whereas book loans are driven by loans to internal borrowers. The cost of processing a book loan is cheaper than an interlibrary loan since book loans require very little time and effort. Internal borrowers locate the books on the shelves themselves and take them to the loans desk person to scan through the computer. The borrower undertakes the tasks of locating and fetching items, thus saving the library much of the processing costs.

Interlibrary loans, on the other hand, employ higher-level staff and are much more time consuming to process than book loans. The interlibrary loan person has to locate the item on an ECU, Western Australian, Australian, or overseas database and then order and arrange delivery of the item to the borrower. An interlibrary loan request can take from five minutes to one hour to process depending on how difficult the items are to locate and their location. To allocate the same cost to interlibrary loans as is allocated to book loans would be inaccurate and would not adequately highlight the differences in the processing costs between the two activities. For the same reason, interlibrary loans have been further refined in this study to create four separate activities and cost pools because of differences in processing times, level of staff, and the cost drivers used in the various interlibrary loan functions (refer to Figure 1).

Cost drivers are the events that cause changes in the behavior of costs in the activity cost pool. Once key activities have been identified, they are analyzed to determine the event (cost driver) that causes the costs in the cost pool to be incurred. For example, the receipt of a purchase order for library materials triggers materials accessioning staff to place an order, while unshelved books trigger the accumulation of costs to shelving. The more books needing to be shelved, the more staff and time involved in shelving and the higher the costs accumulated to the cost pool. In an ABC system, attention is directed towards the relationships between the cost driver and the activity cost. The relationships recognize that, in the long term, many

costs are variable, leading to a strong cause-and-effect relationship between the cost driver and corresponding cost. It is the level of activity of the cost driver that determines the costs in the cost pool. As the level of cost driver activity increases, more staff are pulled from other areas to cope with demand, thus increasing the costs in the cost pool. As demand decreases in an area, staff are shifted away from that activity to other areas where demand is increasing. This effect can be illustrated by the activity reference desk. The cost driver for the reference desk is the number of inquiries received at the desk. During the fourteen-week semester periods, the number of student and staff inquiries at the reference desk is much higher than during periods when classes have ceased. In the busy times, in order to cope with the increased demand, more staff are employed and rostered on the desk than when it is slack. This increases the salary costs in the cost pool. If additional staff were not employed and there was no slack in the resource base, the quality of service during busy periods would decrease. At the reference desk, this is likely to result in long queues or users simply walking away unsatisfied. If staff were not shifted away from the reference desk during periods of low demand, the cost of processing inquiries would be unacceptably high and slack would occur.

Benefits and Limitations in Implementing Activity-Based Costing in the Library

Activity-based costing has many benefits for managerial decision-making, ranging from decisions concerning the overall direction of the library to matters of operational efficiency. One of the main benefits of ABC is that it provides for a more accurate costing of library activities. Activity-based costing provides managers with an understanding of what drives library costs, making them more visible for cost-benefit analyses. As managers gain awareness of the true costs of providing services, they can make choices that better utilize limited resources. Activities that are not value-adding can be eliminated so that resources are channeled to activities that are the most beneficial to the organization and increase efficiency, particularly where quality considerations need to be made. Activity-based costing can be applied to improving the quality of services provided by the library by ensuring appropriate allocation of resources to the most important areas.

Under the University's current accounting system, the library is provided with a line-by-line budget that allocates past expenditures to common cost centers according to expenditure type such as salaries, maintenance, travel, etc. Expenditures for user services and central library services are aggregated together with no identification of expenditure by campus, division, or section. There is no attempt to identify costs by activity or to determine what is driving the costs. For example, all expenditures on computer maintenance and software are allocated to common computer maintenance and software cost centers so the library manager has no idea whether the maintenance costs were incurred in cataloging or at the loans desk. Even main-

tenance and other costs incurred by the Easy Loan system are not separately identifiable so library staff cannot readily determine whether it is cheaper to utilize the Easy Loan system or to process loans manually.

Activity-based costing can also be utilized to derive a fee for charging out services to internal and external users and to facilitate benchmarking (Ellis-Newman et al., 1996). Universities recognize that, under the current system, they are unable to accurately determine a true cost of providing teaching and support services and for the charging out of services. Activity-based costing provides management with a reliable method for determining an appropriate fee. Activity-based costing has many benefits to offer the library and other support areas of the university. However, one of the problems to be overcome if the library does decide to implement an ABC system, is that the current university accounting system does not support the collection of activity-based information. An ABC system uses many more cost pools than those provided by university accounts. For example, to implement ABC, the university's current single cost center for library salaries would need to be divided into multiple cost pools to represent the many activities carried out in the library. The setting up of the system will be initially costly. However, once the system is implemented, much of the necessary detail can be captured and analyzed using the university's existing computer system. In the process, the defining of activities and identifying of costs will provide library managers with a much better understanding of how the library uses its resources, which in itself is beneficial.

The Study

A study using activity-based costing was undertaken in the libraries at Edith Cowan University (ECU) and The University of Western Australia (UWA) in Perth, Western Australia in 1992 (Ellis-Newman et al., 1996; Ellis-Newman & Robinson, 1998). This paper discusses a subsequent study undertaken at the ECU Churchlands campus library in 2001. Since the 1992 study, ECU has undergone a major restructuring of its faculties and central administration. The faculty restructure comprised a merger between the former five faculties to create three: the Faculty of Business and Public Management (Business); the Faculty of Communications, Health and Science (Health); and the Faculty of Community Services, Education and Social Sciences (Education). In addition, the former Library services support area merged with Student Central and many library tasks previously performed manually were computerized. These included the introduction of Easy Loan lending facilities and the online ordering of interlibrary and intercampus loans. Many journals previously ordered in, processed, and shelved by library staff are now accessible to faculty members from their offices via online databases and are no longer physically acquired. Staff who were formerly involved in processing these activities have since been reemployed elsewhere. Apart from the computerization of some activities, the

rest of the activities in user services are still being processed in a similar manner to the way in which they were handled in the previous study.

User Services

The research site used in this study is user services at Churchlands campus. The reason Churchlands was chosen was because it was featured in the 1992 study and was useful for comparative purposes. Churchlands is one of four ECU campuses and caters to full- and part-time students, university staff, and community borrowers external to the university. All three faculties are catered to by the Churchlands Library although Business has the largest number of students on campus. Churchlands Library user services is split into two main sections: circulation, which caters to loans of library materials including books, serials, film, and video; and reference which looks after users' information requirements. Both sections are discussed in this study.

Applying ABC in the Library

There is a four-step approach to implementing an ABC system. The four steps involved are:

- identify the key activities and relevant cost drivers,
- allocate staff time to activities,
- attribute staff salaries and other costs to activity cost pools,
- determine a cost per cost driver.

The following section describes the steps involved in undertaking an ABC study in the library.

Step 1. Identify Key Activities and Relevant Cost Drivers.

Identifying Key Activities. The first step in implementing an activity-based costing system is to identify the key activities being performed. In the study, this step involved interviewing the library staff employed in user services. Staff were asked to identify the main tasks in which they were personally involved and to describe the steps they performed in carrying out each task. From the descriptions, key activities were identified and the steps flowcharted. The purpose of the flowcharts was to determine whether there were any other expenditures, such as computing and database costs, which also needed to be captured in the activity cost pools.

Descriptions were found to be most accurate when described by staff as they physically performed the tasks and least accurate when provided by supervisors who were not personally involved in the actual performance of activities. This is because supervisors who are not directly involved in tasks may only have an overview of how an activity is performed causing them to miss important steps in the process.

Identifying Cost Drivers. Once the key activities were identified, the next step was to identify the cost drivers that caused the occurrence of each ac-

tivity. The cause-and-effect relationships had to be reexamined in 2001 because of changes in library record-keeping procedures and the computerization of some activities. In 1992, library statistics were recorded manually each time staff performed a transaction. For example, each time reference desk staff answered a student or staff inquiry they would press a button under the desk to record the inquiry statistic. Statistics were kept for the number of inquiries at the desk but not by individual subjects and faculties.

At the loans desk, book loans were recorded using a loan card system. At the end of each day, the cards were added and summarized into six categories of loans; Business; Health; and Education students; Staff; Community and Reciprocal Borrowers; and Higher Degree/Others. The availability of separate statistics for each of these groups made it possible to separately identify activities by user group (see Ellis-Newman et al., 1998).

In the mid-1990s, the library changed from a manual recording system to a computerized system and no longer records separate statistics for each type of borrower although the system is capable of recording separate statistics if programmed to do so. The inability to retrospectively capture similar data in this study prevented the allocation of costs by faculty and by borrower type. Instead, the study used the statistics currently being collected. These were the number of item checkins, item checkouts, item renewals, and item recalls. Advocates of a broad-brush[1] approach would probably treat loans desk as one cost pool and divide the total amount in the loans desk cost pool by total activity volume. A more accurate approach is to analyze the key activities being performed at the loans desk and then divide the cost pool for each activity by the volume of activity transactions for that activity. This provides more useful information particularly where different activities are heavier users of resources and time than others. Figure 1 illustrates the key activities identified in 2001 and their relevant cost drivers.

Step 2. Allocate Staff Time to Activities.

Once key activities have been identified, the next step is to apportion library costs to the activity cost pools. The first step in this process is to determine the proportion of time library employees spend on each activity so that their salary costs can be allocated accordingly. There are various ways of doing this including the use of interviews, diaries, timecards, estimates, and retrospective allocation by individuals and library supervisors. The method used will affect the accuracy of the results. The use of timecards, where staff record the amount of time they spend on each activity, provides the most accurate results but is also likely to be the most time consuming and costly to collect. The use of a broad-brush approach will provide the least accurate results for the reasons discussed previously. Whichever method is used, it must give a fair and reasonable approximation of activity costs. In this study, library staff were interviewed and asked to estimate the amount of time they spend on the various activities. In user

Figure 1. User Services Cost Pools and Drivers.

Cost Pools	Cost Drivers
(1) Circulation Section	
Item Loans	Number of Loans
Item Returns	Number of Book Returns
Item Renewals	Number of Renewals
Item Recalls	Number of Recalls
Easy Loans	Number of Easy Loans
Overdue Books	Number of Overdue Books
Closed Reserve—Set up	Number of Reserve Items
Serials Maintenance	Number of Serial Titles
Interlibrary Loans—ECU Requestor	Number of Items Requested
Interlibrary Loans—ECU Supplier	Number of Items Supplied
Intercampus Loans—Churchlands Requestor	Number of Items Requested
Intercampus Loans—Churchlands Supplier	Number of Items Supplied
Film and Video	Number of Film and Video Loans
Shelving	Items Shelved
Equipment Maintenance	Equipment Use
(2) Reference Section	
Reference Desk	Number of Inquiries
Faculty Work—Business	Number of EFTSU—Business
Faculty Work—Health	Number of EFTSU—Health
Faculty Work—Education	Number of EFTSU—Education

services, most employees are rostered onto particular activities, such as shelving or loan desk inquiries, so this allocation was straightforward with each employee's hours being allocated according to the roster. Estimates had to be used for the balance of other tasks that staff performed. These tended to be less accurate as some staff were new and did not feel capable of providing an accurate estimation. In these cases, supervisors' estimates had to be used. Another problem was the fact that staff are often performing other smaller tasks at the same time as their main activities, with a cross-over between tasks, so actual time spent on any one activity is not always easily estimated. Once all the employee hours were accounted for they were then recorded, by activity, as a percentage of the total hours worked by each staff member. Table 1 illustrates the proportional allocation of staff time to key activities.

Some of the above activities were capable of further refinement to smaller activities and these were reallocated after the initial accumulation of costs to the key activity areas. The three main areas where costs were capable of further refinement were the loans desk, reference desk area, and interlibrary loan areas. These are dealt with later on.

Table 1. Percentage of Staff Time Allocated to Activities.

Employee	Supervision	Loans Desk	Overdues	Closed Reserve	Reference Desk	Serials	Film and Video	Shelving	Equipment	ILL	Total
A		33%		53%				13%			100%
B									100%		100%
C		40%	20%					40%			100%
D		53%						40%		7%	100%
E		33%			53%			13%			100%
F		53%					20%	27%			100%
G		33%			51%			16%			100%
H		40%			40%			20%			100%
I		20%				10%		70%			100%
J		33%			50%			17%			100%
K					100%						100%
L					100%						100%
M	53%	33%						13%			100%
N		27%								73%	100%
O		13%								87%	100%
P		42%						17%		42%	100%
Q		8%						8%		84%	100%
R					100%						100%
S	50%				50%						100%
T		50%			50%						100%

Step 3. Allocate Staff Salaries and Other Costs to Activity Cost Pools.

Step three involved a study of the library budget and accounting records in order to identify and assign library costs to the relevant cost pools. Staff salaries constituted the single largest cost for user services although there had been a significant increase in technology costs since the previous study.

Salary costs were allocated to activity cost pools by multiplying the individual salary costs of user services employees by the proportion of time they spent on each activity. Actual salary costs were used as there were not many employees and their individual salary costs were easily identifiable. Where there are many employees and it is considered too time consuming to separately identify individual salary costs, activity costs can be calculated using the median salary cost of all employees. However, this may result in distorted costs if some activities employ more expensive, higher-level staff than others. In addition to the actual salaries paid to staff, there are additional 'on costs' that need to be added to the cost pool. These 'on costs' consist of an additional loading to cover payroll tax, superannuation, long service leave, and workers' compensation. The standard 'on-cost' loading at ECU is 27 percent so salary costs were increased by this amount before apportioning to activities. Where employees were directly involved in performing activities, their salary costs were easily allocated to activities. However, the cause-and-effect relationship was less visible between administration and supervision costs and activities. Most supervisory staff are involved in both supervising and performing some of the user services tasks. Their hours were allocated in the same manner as the other employees with an appropriate amount set aside for supervision activity and this was captured in a separate column. A supervisory cost was then calculated by multiplying the supervisor's salary plus 'on-costs' by the percentage of supervision time attributed to them. The supervision cost was then allocated across the remaining activities according to the number of employee hours consumed by each activity. Employee hours was used as the allocation basis as it was agreed that there was a relationship between total employee hours and the proportion of supervision devoted to an activity. If employee hours had not been an adequate indicator, an alternative approach would have been for the supervisor to estimate the amount of time spent on supervising each activity. Other administration tasks undertaken by the supervisors, such as planning, report writing, attending meetings, etc., were not separately identified as key activities as it was considered that these related to their duties in user services and could therefore be attributed to the existing user service activities.

Table 2 provides the activity costs arrived at after multiplying the percentage of time spent on each activity (from Table 1) by the employee's annual salary cost and adding supervision and other costs. The amounts in the activity columns were then added downwards to arrive at total cost per activity area.

Table 2. User Services Activity Cost Pools.

Employee	Loans Desk	Overdues	Closed Reserve	Reference	Serials	Film and Video	Shelving	Equipment	ILL	Total Costs
A	$11,598		$18,978				$4,569			$35,144
B								$28,115		$28,115
C	$9,840	$4,920					$9,840			$24,601
D	$18,626						$14,058		$2,460	$35,144
E	$13,591			$22,239			$5,354			$41,184
F	$21,828					$8,237	$11,120			$41,184
G	$13,591			$21,004			$6,589			$41,184
H	$14,058			$14,058			$7,029			$35,144
I	$7,029				$3,514		$24,601			$35,144
J	$13,591						$7,001			$20,592
K				$24,400						$24,400
L				$11,465						$11,465
M	$15,133						$5,961			$21,094
N	$6,588								$17,812	$24,400
O	$5,354								$35,830	$41,184
P	$11,808						$4,780		$11,808	$28,396
Q	$2,636						$2,636		$34,595	$39,866
R				$36,691						$36,691
S				$43,426						$43,426
T	$5,653			$9,508						$15,161
Supervision	$18,233	$629	$2,356	$29,292	$446	$892	$12,889	$3,537	$9,458	$52,733
Other								$3,500	$32,000	$35,500
Total	$189,155	$5,549	$21,334	$212,082	$3,960	$9,129	$116,427	$35,152	$143, 963	$736,751

Accounting for Other Indirect and Direct Costs. At ECU, indirect overheads such as electricity and the depreciation of buildings and equipment are not charged to the library so these were ignored in this study. However, indirect costs, where possible, should be assigned to activities on the basis of their cause-and-effect relationship. For example, space costs would be allocated to cost pools based on the square-meter area used by the different activities while electricity would be allocated on a similar basis (for lighting) with perhaps a heavier weighting for activities that are heavier consumers of electricity, such as photocopying and computing.

Stationery costs are likely to be higher for the equipment cost pool which covers photocopiers than for the loans desk or reference desk areas so these should be apportioned according to activity consumption. The flowcharting of activities helped identify the heaviest users of these resources while staff estimates were used for apportioning database access charges and courier costs between interlibrary loans and cataloging. Although a sizable part of the library budget, it was not possible to separately identify the computing software and maintenance costs for Churchlands campus library, let alone user services, as all such expenditure is accumulated under one common cost center for all campuses. In a broader study of the entire university library system and, given more time, an appropriate basis for allocating these costs across activities could be determined. Using the cost driver to allocate costs to activity cost pools, loans desk, interlibrary loans, and reference were three areas identified in Step 2 as being capable of further refinement into smaller activities. The first of these, loans desk, was split into four activities; item loans, item returns, item renewals, and item recalls. If the four activities carried out under loans desk took the same amount of time to perform, then information would not be sacrificed by using just one loans desk cost pool and driver. However, if accuracy is truly desired, it is unreasonable to expect that an activity that takes five minutes to perform should bear the same cost as one that takes half an hour. For this reason, when determining the cost per cost driver, it is necessary to weight activity statistics based on the amount of resources they consume.

The processing of item renewals and item recalls at the loans desk takes approximately twice as long as the processing of item loans and returns, so the former were weighted by multiplying their activity volume by two to recognize that they consumed double the resources. The total amount in the loans desk cost pool in Table 2 was then divided by the total of the new weighted activity statistic to arrive at a cost-per-activity unit. Next, the total cost for each of the four cost pools was determined by multiplying the cost-per-activity unit by each activity's weighted cost driver volume. This enabled the total cost in the loans desk cost pool to be allocated across the four separate activities in the loans desk area according to their resource consumption. Finally, the total amount in each activity's cost pool was divided

by its original unweighted activity volume to arrive at a cost per cost driver. From Table 3 it can be seen that a straightforward item loan or return costs $0.95 to process while item recalls and renewals, at $1.90, cost twice as much.

A similar process was undertaken with the interlibrary loans cost pool. Interlibrary loans encompass intercampus loan (ICL) requests between the four ECU campuses and interlibrary loans (ILL) between ECU and other Australian and overseas libraries. In ILL, 75 percent of item requests take about ten minutes to process while the more difficult requests can take from fifteen minutes to one hour. To assign a cost to the ILL requests, 75 percent were weighted by one (ten minutes), and the more difficult 25 percent were weighted by three (based on an estimated *average* processing time of thirty minutes). This was considered sufficient for this study. It was determined that a straightforward ILL request costs approximately $8.80 (ten minutes to process) while the most difficult request costs $52.80 (one hour to process or six times the cost of processing straightforward requests). Most requests (75 percent) occur at the lower end of the range and so an average cost of $13.21 for ILL requests was calculated overall, after weighting for the percentage of straightforward and difficult items. Intercampus loans were cheaper to process because of lower salary costs (lower HEW-level staff employed) and the shorter time taken to process loans. The additional costs of $32,000 were made up of $5,000 for postage and $27,000 estimated for interlibrary loan access costs to the various Australian and overseas databases. The other $3,500 allocated to equipment is an estimate of stationery costs incurred by photocopying.

Step 4. Determine Cost Per Cost Driver.

Having determined a total cost for each activity, the next step is to calculate the cost per cost driver. This is calculated by dividing the total amount in each activity cost pool by the cost driver volume. The results are provided in Table 3.

Although reference desk inquiries, overdues, and shelving, were identified as key activities, it was not possible to determine a cost per cost driver simply because the library does not keep the relevant statistics. At first glance, one might presume that shelving is a function of the number of books borrowed, and, as such, activity costs can be determined through an analysis of loan statistics. While this may be true in some libraries, this is not the case for Churchlands Library because of its very high proportion of in-library use, which is not captured in the loan statistic. One method of arriving at a cost driver volume in the absence of recorded statistics would be to survey library users and to keep a record of books shelved by subject but the benefits in trying to achieve this level of accuracy are probably minimal. Observations by library staff involved in this type of activity can often be quite accurate so staff estimates could be utilized. Another alternative is to use the number of equivalent full-time student units (EFTSU) as a

Table 3. Activity Cost Driver Table for User Services—Churchlands Campus Library.

Activity	Cost Driver	Total Cost	Driver Volume	Cost Per Driver
Item Loans	Number of Loans	$44,346	46,789	$0.95
Item Returns	Number of Returns	$112,882	119,100	$0.95
Item Renewals	Number of Renewals	$29,421	15,521	$1.90
Item Recalls	Number of Recalls	$2,506	1,322	$1.90
Easy Loans	Number of Easy Loans	$18,720	79,835	$0.23
Overdue Books	Number of Notices	$5,549	n/a	
Closed Reserve	Number of Reserve Items	$21,334	580	$36.80
Serials Maintenance	Number of Serial Titles	$3,960	10,797	$0.37
Film and Video	Number of Loans	$9,129	2,223	$4.11
Shelving	Items Shelved	$116,427	n/a	
Equipment	Equipment Use	$35,152	1,308,634	$0.03
IL Loans—ECU Requestor	Number I/L Loans Requested	$60,613	4,589	$13.21
IL Loans—ECU Supplier	Number I/L Loans Supplied	$72,642	4,422	$16.43
IC Loans—ECU Requestor	Number I/C Loans Requsted	$204	295	$0.70
IC Loans—ECU Supplier	Number I/C Loans Supplied	$8,227	2,972	$2.77
Invoicing	Number of Invoices	$2,277	2,800	$0.81
Reference Desk				
Reference Desk	Number of Inquiries	$78,055	n/a	
Faculty Work—Business	EFTSU—Business	$72,583	2,379	$30.51
Faculty Work—Health	EFTSU—Health	$21,509	1,031	$20.86
Faculty Work—Education	EFTSU—Education	$39,935	1,351	$29.56
Total Costs		$755,471		
Number of Churchlands EFTSU		$4,761		
Cost per EFTSU		$158.68		

proxy for library usage. This, of course, presumes that all disciplines and undergraduate and postgraduate students are equal users of library resources, which, in fact, is not the case. Reference desk faculty work encompasses all activities related to looking after and maintaining the library collection for each faculty, plus other faculty-related activities. EFTSU was used as the cost driver for reference desk faculty work as EFTSU was considered a reasonable driver of faculty referencing costs. Finally, a unit cost per EFTSU was determined for the overall user services section of Churchlands Library by dividing the total amount in the user services cost pool by the number of EFTSU at Churchlands. This gives the cost per EFTSU of providing library services at Churchlands campus and is useful for a comparison of costs across the other campuses and at other institutions. It also demonstrates the limited value of the information, had a broad-brush approach been adopted.

Conclusion

This paper discusses the benefits of ABC to library managers and provides an illustration of the type of information an ABC system can provide to assist with decision-making. The information provided in the above tables relates directly to the costs of activities of concern to library managers and is not readily available from the university's traditional accounting system. Although not trained as accountants, library managers rely on accounting information for strategic planning and operational decision-making. Increased demands for institutional accountability, with university performance and costs under increased scrutiny, place library managers under increased pressure to maintain quality services while faced with decreased funding and tighter budgets. A commitment to greater efficiency requires an understanding of cost behavior. The university budget reports provided to library managers are designed for legislative funding requirements rather than for management decision-making and generally mirror the requirements of the institution's funding bodies. University accounting reports fail to provide adequate information to enable managers to determine the cost of services and to make optimal decisions regarding the allocation of scarce resources. One of the best tools for understanding cost behavior and for refining a cost system is activity-based costing. The rationale behind using ABC in universities is the same as for manufacturing and industry—to allocate indirect costs to goods or services based on the factors that most influence them. The use of multiple cost pools and drivers under ABC leads to more detailed and accurate product costing than that provided by traditional cost systems. The individual activities become the central cost focus with the assigning of costs to activities based on the way in which the resources are consumed by the activities. Managers can then determine whether certain activities are necessary or whether they can be eliminated. Only services that are value adding are maintained while nonvalue-adding services can be eliminated, resulting in cost savings for the university.

Note

1. A broad-brush approach refers to the assigning of the cost of resources uniformly to cost objects (services) when the individual services actually use those resources in a nonuniform way. This is a cheaper method of assigning costs under ABC but it usually results in less-reliable data.

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