

“Total Cost” of Acquisitions in a Community College

Total cost has apparently been seldom determined for library operations; yet it would seem to be necessary for deciding whether or not a change is in order. Total costs are herein determined of acquiring a book for use (\$4.85) at Macomb County Community College library. The techniques applied are suggested for determining total costs of other library operations and in other locations.

THE PURPOSE of this analysis is to show a methodology for determining the total cost associated with library operations. Quite often, a much lower figure is substituted for total cost due to the complexities in determining total cost. Total cost is not always a popular product because operational costs are generally much larger than anticipated, even when simplified costing techniques are used; less popularity is forthcoming when it is pointed out that the true costs are much higher than the already unexpected high cost. But total cost is an important commodity when planning to modify or implement an operation. It needs to be as accurate as possible for effective planning.

Obviously, to determine properly the total cost of an operation, all costs associated with the operation must be included. Often, for simplification, only the costs apparent to the casual observer are considered. This analysis attempts to consider all the costs associated with the operation. Often such costs are not readily available because of the interactions which occur. Most operational

costs can be isolated accurately, however, if the operation is viewed from its proper perspective within the system.

Total cost for an operation can be determined accurately by carefully examining the costs associated with the operation; each operation of the library has the following costs associated with it:

- Materials cost
- Personnel cost
- Equipment cost
- Supplies cost
- Area cost

These five cost items are simply the costs associated with any operation involving personnel. But each of these items contains some hidden costs which frequently are not considered in cost analysis. A method for isolating and determining the hidden as well as the obvious costs is needed. This analysis represents an effort to formulate such a method.

The method employed is best illustrated by carefully presenting the cost analysis for one specific operation. The Macomb County Community College (MCCC) library has provided the information necessary for such an illustration. The operation chosen for illustration is the incorporation of a volume into the library holdings; the operation of select-

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TABLE 1
COST OF MATERIALS

Volume	cost of volume
LC cards:	
(10¢ for 1st card, 6¢ for each add.; average 6 per vol.)	\$.40
Book card	.004
Book pocket	.009
Due date slip	.002
Label (on spine)	
(450 books per roll of 12.50)	.028
Paste, markers, misc.	.007
Total Materials Cost	\$.45
	+ cost of volume

ing, acquiring, and processing a volume for the library. That is, the operation which produces a volume on the library shelf ready for circulation.

Materials Cost is the cost for materials consumed in producing the end product. For the illustrative example, the end product is a volume on the library shelf ready for circulation. Examples of materials associated with this product are: the volume itself, LC cards for the volume, book card, book pocket, due date slip, etc. Simple averaging procedures are used to determine the cost per volume for such items. For example, to determine the average number of LC cards per volume, the total number of LC cards in the library is divided by the total number of volumes in the library; the cost of other materials are found in a similar manner. A complete list of these materials including their costs is shown in Table 1.

The procedure used in determining each cost included in the materials cost implies this cost is very accurate.

Personnel Cost is the cost of personnel for the operation. For the illustrative example, this cost is not easily determined, especially as some of the personnel perform more than one operation. The simplest technique for isolating this cost for each employee is to assign a percentage to each employee which corresponds

to the fractional amount of his time devoted to this operation; this assigned percentage could then be multiplied by the total cost for the employee, thereby determining the amount of his total cost to include in the personnel cost for this operation. Not only is this the simplest technique, but it is a satisfactory technique when used with due caution and slight modification. Instead of assigning a percentage to each person representing the fractional amount of time he devotes to this operation, assign percentage estimates to each person representing the fractional amount of time he devotes to each of his duties, thereby ac-

TABLE 2
COST OF PERSONNEL

ITEMS:	
Selecting—advertisements, applications, etc.	
Acquiring—interviews, correspondences, etc.	
Processing—employee records, orientation, payroll, sick leave, keys, etc.	
Terminating—closing file, references, etc.	
Benefits—insurance, parking, etc.	
Misc.—personal items areas, lounge areas, eating areas, atmosphere, breakage, pilferage, etc.	
Salary	
COSTS:	
Items 1-4—estimated by the business office to cost 5 per cent of salary for professional and clerical personnel; 2 per cent for student personnel	5 per cent of salary
Item 5—estimated by business office	\$225.00
Item 6—estimated at 1 per cent of salary; no estimate available from business office	1 per cent of salary
Item 7	100 per cent of salary
Total	\$225.00
	+ 106 per cent of salary
Total Cost for Personnel	\$ 3.729
	per volume

counting for one hundred per cent of each employee's time. Since these percentage estimates account for all man hours for all employees, they must be assigned so that each operation performed by the library has its appropriate man-hours assigned to it. Thus any overestimate for one operation produces an underestimate in some other operation. This may not appear at first glance to increase the accuracy of the percentage estimate for the specific operation under consideration, but it does; because it places restrictions regarding the percentage estimates assigned to each individual for each operation; it also allows objective comparison of the percentage estimates for the different operations which helps to eliminate undue biasing of the estimates. These estimates could be determined more accurately by having each employee keep time work sheets for a period of time; however, if the above procedure is followed carefully and as objectively as possible, it is doubtful if the improvement in accuracy is worth the extra effort, especially for the illustrative example.

There are other costs associated with employees. For example, the cost for the employee's files and paychecks, the cost of employee benefits such as insurance, sick leave, and retirement funds. Also, the costs associated with providing lounging, eating, and parking facilities. A complete list of the details and the cost associated with personnel is shown in Table 2.

The total cost for personnel (\$3.729 per vol.) represents the total cost for personnel including all hidden, student, clerical, and professional costs for this operation.

This cost can never be as accurate as other costs, but the cost given is satisfactory. Most likely it is the best possible due to the difficulties in isolating such costs and the built-in checks mentioned above used in determining the percentage estimates for each employee.

Equipment Cost is the cost associated with the furniture and equipment used in performing the operation. For the illustrative example, these costs are calculated by amortizing the cost for each item of furniture and equipment over a *minimum* life expectancy. A minimum life expectancy produces a slightly larger amortized cost than would expected life, but with the rapid changes in modern technology few items are kept even to minimum life expectancy. Thus minimum life expectancy is a more appropriate time for which to amortize costs. Also, since these items cannot be purchased on a prorated basis, there is the cost associated with the initial capital investment; this cost has been included by using 5 per cent simple interest on the capital investment.

The total equipment cost is \$.136 per volume.

This cost could be a slight overestimate. Although every effort was made to include each item, some omissions are likely. Thus any overestimate due to the procedure of using the minimum life expectancy is likely to be more than offset by the rapid changing technology and/or possible omissions.

Supplies Cost is the cost associated with the supplies and/or miscellaneous items used in performing the operation. For the illustrative example, this includes postage, small miscellaneous items of equipment, order blanks, paper, pens, envelopes, paper clips, and staples. This cost is not available as such for the example, but is estimated to be \$.166 per volume.

This is based on a percentage estimate for this operation multiplied by the total supplies cost for the library.

This cost is likely an overestimate, but this supply cost includes postage and small miscellaneous items of equipment in addition to operational supplies.

Area Cost is the cost associated with occupying an area—the area occupied by the personnel, materials, furniture, and

TABLE 3
TOTAL COST

Total material cost	\$.450
	+ cost of volume
Total personnel cost	3.729
Total equipment cost136
Total supplies cost166
Total area cost364
Total	\$4.845
	+ cost of volume

equipment for the operation. For the illustrative example, the area cost is found by determining the floor space occupied by the operation, then prorating the cost of the building, maintenance (janitorial services included), utilities, and capital investment for the occupied floor space. This procedure produces \$.364 per volume as the total area cost for this operation.

The procedure employed for determining the area cost suggests this cost is accurate.

With the above total cost for each of the individual cost items, it is easy to determine total cost for the operation of incorporating a volume into the library holdings; the cost is simply the sum of

the above five costs. This sum is shown in Table 3.

This last number (\$4.845 + cost of volume) represents the total cost for a volume to arrive on the library shelf ready for circulation.

CONCLUSION

The above illustration indicates that it is possible to isolate total cost for what may have originally been considered a rather loosely defined operation which included some hidden costs. Nevertheless, total cost was found using the illustrated method, and it is a good estimate of the total cost for the operation of incorporating a volume in the MCCC library for the fiscal year 1965-66.

As a careful examination of the derivations reveals, it is often more accurate to isolate an individual operational cost by isolating several operational costs simultaneously. Thus, much of the fundamental analysis for other operational costs is available when one operational cost is found by the method illustrated. That is, other operational cost such as circulation cost, periodical cost, or patron cost, can now be found with minimum effort. This is another advantage of using this method to find "Total Cost." ■■

