4 Concepts in Allocating Service Department Costs

Not all discrete units within a business organization are focused on production of the end product. Janitorial departments, cafeterias, maintenance/repair shops, health clinics, and countless other units support the productive units. How are the costs of such service departments to be considered in forming judgments about the success or failure of the various operating units?

In general, service department costs are allocated to operating units via some adopted allocation scheme. This allocation occurs to support measurement of full product cost (as contemplated by GAAP), to make managers of operating units aware of the complete cost of their activities, and to discourage waste and inefficiency by over utilization of service departments. The allocation scheme will generally be based on either a direct or step allocation approach.

4.1 The Direct Method of Allocating Service Department Cost

The direct method transfers the cost of a service department directly to the productive departments that rely on the services. The allocation is usually based upon some logical benchmark. For example, janitorial services may be allocated to productive departments based on square footage used by the productive departments. Cafeteria costs may allocated based on the number of employees within each production department. Hopefully, the base selected bears a logical relationship to the consumption of services and their costs. Assume that Benjamin Printing

Company has two production departments: printing and binding. Printing is highly automated, with a number of complex printing presses. Binding also relies on mechanized devices, but is overall a far more labor intensive department. These departments are supported by maintenance and cafeteria service units. Maintenance activities are driven by the amount of machinery requiring service and repair. The utilization of cafeteria services is directly related to the size of the labor pool. As a result, a decision was reached to allocate costs incurred by the Maintenance Department based on number of machines used by each productive department. Cafeteria costs are allocated based on number of employees. The following table shows how the total costs were directly allocated to production activities:

DIRECT ALLOCATION OF SERVICE DEPARTMENT COSTS

	SERVICE DEPARTMENTS		PRODUCTIVE DEPARTMENTS	
	Cafeteria	Maintenance	Printing	Binding
Department Costs	$ 600,000	$ 900,000	$3,700,000	$2,500,000
Cafeteria Allocation	(600,000)	-	150,000	450,000
Maintenance Allocation	-	(900,000)	675,000	225,000
Total Cost After Allocation	-	-	$4,525,000	$3,175,000
Key Statistics:				
Number of employees	n/a	n/a	5	15
Number of machines	n/a	n/a	30	10

Allocation Calculations:

Cafeteria to Printing: cafeteria cost times ratio of printing employees to total productive department employees
$600,000 X 5/(5+15) = $150,000

Cafeteria to Binding: cafeteria cost times ratio of binding employees to total productive department employees
$600,000 X 15/(5+15) = $450,000

Maintenance to Printing: maintenance cost times ratio of printing machines to total productive depart. machines
$900,000 X 30/(30+10) = $675,000

Maintenance to Binding: maintenance cost times ratio of binding machines to total productive depart. machines
$900,000 X 10/(30+10) = $225,000

4.2 The Step Method of Allocating Service Department Cost

The direct approach ignores one potentially important issue. Some service departments may provide support to other service departments. For instance, Benjamin's maintenance employees likely eat in the cafeteria, too! This issue is mitigated by a step method of allocation. With the step method, an identified service department's cost is first allocated to other units, including other service departments. Then, the "resulting costs" of the other service departments are allocated to production. This step allocation process is demonstrated for Benjamin, assuming that cafeteria costs benefit maintenance, printing, and binding operations:

STEP ALLOCATION OF SERVICE DEPARTMENT COSTS

	SERVICE DEPARTMENTS		PRODUCTIVE DEPARTMENTS	
	Cafeteria	Maintenance	Printing	Binding
Department Costs	$ 600,000	$ 900,000	$3,700,000	$2,500,000
Cafeteria Allocation	(600,000)	200,000	100,000	300,000
Maintenance Allocation	-	(1,100,000)	825,000	275,000
Total Cost After Allocation	-	-	$4,625,000	$3,075,000
Key Statistics:				
Number of employees	n/a	10	5	15
Number of machines	n/a	n/a	30	10

Allocation Calculations:

Cafeteria to Maintenance: cafeteria cost times ratio of maintenance employees to total department employees
$600,000 X 10/(10+5+15) = $200,000

Cafeteria to Printing: cafeteria cost times ratio of printing employees to total department employees
$600,000 X 5/(10+5+15) = $100,000

Cafeteria to Binding: cafeteria cost times ratio of binding employees to total department employees
$600,000 X 15/(10+5+15) = $300,000

Maintenance to Printing: maintenance cost times ratio of printing machines to total productive depart. machines
$1,100,000 X 30/(30+10) = $825,000

Maintenance to Binding: maintenance cost times ratio of binding machines to total productive depart. machines
$1,100,000 X 10/(30+10) = $275,000

4.3 Multiple Steps and Simultaneous Allocations

A large organization can have many service departments, and it is quite possible to identify a number of interactions between various service departments. The design to achieve a logical allocation of costs can entail numerous sequential steps (e.g., Department A serves Departments B, C, D, and E; then Department B serves Departments C, D, and E, etc.). Or, it may be observed that service departments benefit each other (e.g., the maintenance staff eats in the cafeteria, but the cafeteria utilizes maintenance employees to repair ovens). There is no mathematical limit to the number of step allocations that can be made. In the alternative, calculus could be used to achieve numerous simultaneous allocations. These situations provide intellectually stimulating challenges, but they may not be worth the cost of implementation. As a result, companies are usually content to rely on direct or very simplified step allocations of service department costs.