1. Appendix 4B: Service Department Allocations (slide 1 is the title slide)

#### Key definitions/concepts

* + 1. **Operating departments** carry out the central purpose of the organization. Examples of operating departments include:

2

* + - 1. The Surgery Department at Mt. Sinai Hospital.
      2. The Geography Department at the University of Washington.
      3. The production departments at Mitsubishi.
    1. **Service departments** do not directly engage in operating activities. They provide services or assistance to the operating departments. Examples of service departments include:

3

* + - 1. Cafeteria, Internal Auditing, Human Resources, and Accounting.
    1. The overhead costs of operating departments frequently include allocations of costs from service departments. To the extent service department costs are classified as production costs, they should be included in unit product costs and thus must be allocated to operating departments in a process costing system.

4

* + 1. Three approaches are used to allocate service department costs to other departments—**the direct method, the step-down method, and the reciprocal method.**

5

* + 1. Keep in mind that many service departments provide services to each other, as well as to operating departments. Services provided between service departments are known as **interdepartmental or reciprocal services**.

6

#### Methods of allocation

*Learning Objective 10: Allocate service department costs to operating departments using the direct method.*

7

* + 1. **Direct method: a definition**
       1. The direct method is the **simplest** of the three cost allocation methods because it **ignores** the services provided by a service department to other service departments. It allocates all costs **directly** to operating departments.

8

* + 1. **Direct method: an example**
       1. Assume that a company has two service departments (**Cafeteria and Custodial**) and two operating departments (**Machining and Assembly**) with accompanying information as shown.

9

* + - 1. **How much of the Cafeteria and Custodial costs should be allocated to each operating department?**

10

* + - 1. The **Machining Department** would be allocated **$144,000** of the Cafeteria Department’s costs as shown. Notice:

11

* + - * 1. The allocation base is the **number of employees**.
        2. Quantities of the allocation base attributed to the service departments are **ignored**.
      1. The **Assembly Department** would be allocated **$216,000** of the Cafeteria Department’s costs as shown. Notice:
         1. The sum of the costs assigned to Assembly (**$216,000**) and Machining (**$144,000**) is equal to the total costs assigned from the Cafeteria (**$360,000**).

12

* + - 1. The **Machining Department** would be allocated **$30,000** of the Custodial Department’s costs as shown. Notice:

13

* + - * 1. The allocation base is **square feet occupied**.
      1. The **Assembly Department** would be allocated **$60,000** of the Custodial Department’s costs as shown. Notice:

14

* + - * 1. The sum of the costs assigned to Assembly (**$60,000**) and Machining (**$30,000**) is equal to the total costs assigned from the Custodial Department (**$90,000**).

14

*Helpful Hint: What to include in the allocation base under the direct method often confuses students. For example, if Personnel Department costs are allocated on headcount, should the Personnel Department headcount and that of other service departments be included? While it doesn’t seem to make much sense economically, the service departments must be excluded to avoid allocating costs back to the service departments.*

*Learning Objective 11: Allocate service department costs to operating departments using the step-down method.*

15

* + 1. **Step-down method: a definition**
       1. The step-down method provides for allocation of a service department’s costs **to other service departments**, as well as to operating departments. It is **sequential** and the sequence usually begins with the department that provides the **greatest amount of service to other service departments**.

16

* + - * 1. Once a service department’s costs have been allocated to other departments, other service department costs **are not allocated back to it**.
      1. There are **three key points** to understand regarding the step-down method:
         1. In both the direct and step-down methods, any amount of the allocation base attributable to the service department **whose cost is being allocated** is always **ignored**.
         2. Any amount of the allocation base that is attributable to a service department **whose cost has already been allocated is ignored**.

17

* + - * 1. Each service department assigns its **own costs** to operating departments plus **the costs that have been allocated to it** from other service departments.
    1. **Step-down method: an example**
       1. Assume the **same facts** that were used for the direct method example.

18

* + - 1. **How much of the Cafeteria and Custodial costs should be allocated to each operating department?**

19

* + - * 1. Assume that the Cafeteria costs are allocated **first** followed by the Custodial Department.
      1. The **Custodial Department** would be allocated **$60,000** of the Cafeteria Department’s costs as shown. Notice:

20

* + - * 1. The allocation base is the **number of employees**, and the quantity of employees in the denominator is **60**.
      1. The **Machining Department** would be allocated **$120,000** of the Cafeteria Department’s costs as shown.

21

* + - 1. The **Assembly Department** would be allocated **$180,000** of the Cafeteria Department’s costs as shown. Notice:

22

* + - * 1. The sum of the assigned costs (**$60,000 + $120,000 + $180,000**) equals the total Cafeteria Department costs of **$360,000**.
      1. The **Custodial Department** will allocate **$150,000** in total costs. This amount includes the department’s own costs of **$90,000** plus the amount allocated from the Cafeteria Department of **$60,000**.

23

* + - 1. The **Machining Department** would be allocated **$50,000** of the Custodial Department’s costs as shown. Notice:

24

* + - * 1. The allocation base is **square feet occupied**.
      1. The **Assembly Department** would be allocated **$100,000** of the Custodial Department’s costs as shown. Notice:
         1. The sum of the costs assigned to Assembly (**$100,000**) and Machining (**$50,000**) is equal to the total costs assigned from the Custodial Department (**$150,000**).

25

*Helpful Hint: What to include in the allocation base under the step-down method often confuses students. Never include in the allocation base the service department whose cost is being allocated; once a service department’s cost has been allocated, pretend the department does not exist anymore. In other words, at each step allocate a service department’s costs to the remaining service departments and to all of the operating departments.*

* + 1. **Reciprocal method: a definition**
       1. The reciprocal method gives **full recognition** to interdepartmental services. While the step-down method only allocates costs forward – never backwards – the reciprocal method allocates costs in **both directions**.

26

* + - 1. Reciprocal allocation requires the use of **simultaneous linear equations** and is beyond the scope our book.

*Helpful Hint: Students may object to the inaccuracies of the step-down method. This gives an opportunity to explain the reciprocal method. Ask students what would happen if every service department’s costs were allocated to all of the service departments (including itself as appropriate). Someone should answer that some costs would still be left in the service departments when the allocations are finished. Ask what would happen if you started over and used the same procedure to allocate the service department costs that remain. Someone should answer that some costs would still be left in the service departments, but the costs would be less than before. In fact, if this process is repeated many times until no costs are left in the service departments, you have essentially performed a reciprocal allocation.*

Quick Check – direct and step-down methods

27-34