

I. JOB COSTING FOR PLANNING AND CONTROL**A. Job Costing and the Planning and Control Functions:**

1. The major differences between job costing in a manufacturing environment as opposed to a service environment lies in fact that:
 - a. inventory costing is not an issue in service environments, the emphasis in service companies is on the planning and control aspects of job costing;
 - b. the terminology employed for cost centers is not "jobs" but "cases", "contracts", "engagements" and the like.

NOTE: The discussion of job order costing that follows concentrates on the planning and control considerations **common to all job costing systems**. Please note that the entire discussion is equally applicable to job costing systems of manufacturing companies. The planning and control aspects of job costing systems are isolated in this manner only as a pedagogical tool to enable separate discussion of the inventory valuation aspects and the planning and control aspects.

B. Alternative Approaches to Allocating Costs to Services Rendered

1. Alternative One: one cost pool for direct costs, one cost pool for indirect costs (overhead):

a. Determination of cost pools:

1. Direct Labor of the professional staff is the only direct cost;
2. All other supporting costs are indirect costs and is typically applied as a percentage of DL costs;

$$\text{Budgeted overhead application rate} = \frac{\text{Budgeted overhead cost}}{\text{Budgeted DL cost}}$$

b. Problems with the approach:

1. All labor is pooled together; we know that partners, high level, mid level and low level professional staff members are compensated at different rates, but this approach makes no allowance for that difference.
2. Support staff is lumped together and allocated equally to all engagements (jobs); this is clearly not justifiable or fair to certain clients because different clients require different level of overhead;
3. Clients demanding detailed analysis of how costs or engagement fees are arrived at would never accept this approach in a competitive business environment.

c. Advantages to this approach:

1. easy to apply; no cost benefit studies involving the cost of detailed record keeping are required

2. Alternative Two: multiple direct cost pools, one indirect (overhead) cost pool:

a. Determination of cost pools:

1. Direct professional labor may be classified in a single pool or broken down by rank;
2. Direct support staff traceable to the job is may be classified in a single pool or broken down by rank;
3. Indirect (overhead) costs are applied on some arbitrary basis that can be justified to clients based on empirical evidence;

b. Problems with the approach:

1. requires extensive cost benefit analysis to justify (but may be unavoidable in a competitive environment);
2. requires detailed record keeping on all levels by both professional and support staff;

c. Advantages to this approach:

1. costs of specific engagements are allocated directly to the engagement;
2. system can be perfected over a period of time, thus enhancing fee estimation techniques and job control;
3. fees are more easily justified to clients and in the cases of disputes, partners have accurate cost information with which to adjust fees or make other operational decisions;

3. Alternative Three: multiple direct and indirect cost pools:

a. Determination of cost pools:

1. Direct professional labor may be classified in a single pool or broken down by rank;
2. Direct support staff traceable to the job is may be classified in a single pool or broken down by rank;
3. Indirect (overhead) costs are applied based on several application rates that are more closely related to the incurrance of specific overhead costs;

II. PROCESS COSTING**A. The Central Issue in Process Costing is Indistinguishable (Homogeneous) units:**

1. Process costing is used when products are homogeneous/indistinguishable. Consequently it is difficult or impossible to accurately maintain job-cost records;

2. Consequently the central issue in a process costing system in the determination of the costs of goods being transferred from one department to another for further processing;
- this issue is further complicated by the fact that not all goods in a given department are 100% completed prior to the transfer of some goods to the next department;
 - this issue is addressed by the concept of **equivalent units of production** discussed in handout 4-2B.

Note: It must be noted that the physical flow of goods in a process costing environment is different that the equivalent units of production used for product costing purposes. With this in mind, process costing problems usually require the resolution of five issues:

- Determine the physical flow of completed units between departments;
- Determine both the beginning and ending WIP inventory of each department in terms of equivalent units of production for WIP inventory for each factor of production (DM, DL, OH);
- Determine the total costs to account for in each department;
- Determine the equivalent units of production of each department;
- Determine the cost of units completed;
- Determine the cost of units transferred to the next department;

B. Simple Process Costing Illustration

--Aztec produces simple microprocessors in large quantities. The company has two departments, assembly and testing.

--Manufacturing costs incurred in January were:

Direct Material Used:	\$	72,000
Direct Labor Cost:		40,000
Overhead Cost:		<u>36,000</u>
Total Manufacturing Costs:	\$	<u>148,000</u>

--There was no beginning inventory;

--10,000 microprocessors were begun and 9,000 were completed in January and transferred to the testing department.

--Percentage of completion of the factors of production is presented below:

	<u>Assembly Department</u>			<u>Testing Department</u>		
	<u>DM</u>	<u>DL</u>	<u>OH</u>	<u>DM</u>	<u>DL</u>	<u>OH</u>
Beginning WIP	---	---	---			
Ending WIP	100%	50%	40%			

Required:

- Determine the physical flow of completed units between departments;
- Determine both the beginning and ending WIP inventory of each department in terms of equivalent units of production for each factor of production (DM, DL, OH);
- Determine the total costs to account for in each department;
- Determine the equivalent units of production of each department;
- Determine the cost of units completed and transferred to the next department;
- Determine the cost of units transferred to the next department;
- Present all necessary journal entries;

Solution:

- Determine the physical flow of completed units between departments: 9,000 units (given)
- Determine both the beginning and ending WIP inventory of each department in terms of equivalent units of production for WIP inventory for each factor of production (DM, DL, OH);

Beginning WIP: **Note:** The Beginning work in process was given as zero in this problem. In a normal case, the beginning WIP would be the ending WIP of the prior period. Consequently, there is not computation for beginning WIP.

Equivalent Units of Production for WIP Inventory

<u>Ending WIP:</u>	(Ending WIP)(% completion)
DM:	(1,000) (100%) = 1,000
DL:	(1,000) (50%) = 500
OH:	(1,000) (40%) = 400

3. Determine the total costs to account for in each department: \$148,000 (given)

4. Determine the equivalent units of production of each department:

	<u>Equivalent Units of Production</u>
	Units Completed and Transferred + EU in ending WIP
DM:	9,000 + 1,000 = 10,000
DL:	9,000 + 500 = 9,500
OH:	9,000 + 400 = 9,400

5. Determine the cost of units completed and transferred to the next department;

Cost of DM:	\$72,000/10,000 units	=	\$ 7.20/unit	(Cost of DM/EU of Production)
Cost of DL:	\$40,000/ 9,500 units	=	\$ 4.21/unit	(Cost of DL/EU of Labor)
Cost of OH:	\$36,000/ 9,400 units	=	<u>\$ 3.83/unit</u>	(Cost of OH/EU of Overhead)
Total cost per equivalent unit:			\$15.24/unit	

6. Determine the cost of units transferred to the next department;

Cost of units transferred: 9,000 × \$15.24 = \$137,160

7. Present all necessary journal entries;

WIP--Assembly.....	148,000	
DM Control.....		72,000
Wages Payable.....		40,000
Various Indirect Accounts payable...		36,000
to record costs of assembly department		

WIP--Testing.....	137,160	
WIP--Assembly.....		137,160
to record transferred cost of units to testing department		

III. ACTIVITY BASED ACCOUNTING SYSTEMS (of applying indirect costs)

A. Purpose of Activity Based Accounting (ABA) Systems:

1. enhance accuracy of applying indirect costs to cost centers (jobs) and
2. improve management and control of production and service department costs by:
 - a. Selecting and utilizing multiple cost drivers to allocate indirect costs based on the presumption that specific indirect costs are associated with specific cost drivers;
 - b. generating more accurate cost data by utilizing multiple cost drivers

B. Differences between Conventional Systems and ABA Systems:

1. Number and type of cost pools: Conventional systems utilize a few indirect-cost pools and are not concerned if the relationship between a cost driver and a cost pool is closely related if the resulting application is not grossly misstated; ABA systems emphasize multiple cost pools in any instance where a specific cost driver can be identified, the emphasis in ABA systems is on accurate application of indirect costs to specific jobs even if the cost of getting the information is higher.
2. Nature of the Cost Application Bases: Conventional systems typically use financial application bases such as direct labor cost or direct material cost; ABA systems typically use nonfinancial application bases based on the belief that nonfinancial application bases (such as machine hours, number of components, etc.) are more closely related to the indirect costs incurred.