Addressing the Criticisms of Absorption Cost Systems with Activity Based Costing (ABC)

Outline of our discussion of absorption costing:

- In this lecture we will introduce activity-based costing (ABC) and compare it to traditional absorption costing.
- The last several lectures began the discussion of absorption costing, and it's discontents.
- We also discussed how changes in performance measurement require changes in other parts of organizational architecture (performance measurement and decision rights partitioning).

Problems with absorption costing:

1. Allocating fixed costs on a unit basis makes the seem variable.
    - The death spiral
    - Bad outsourcing choices
2. Incentive to overproduce.

One more problem: Inaccurate Product Costs

- **multiple products**, absorption costing often does not accurately represent the opportunity costs of different products.
- Absorption costing uses few input factors, such as direct labor hours or machine hours, to allocate overhead costs
- Absorption costing does not clearly show how costs are influenced by the diversity and complexity of production processes.
- Absorption cost systems assign too few costs to small batches and complex special orders.

ABC's Major Features

- Better identifies activities that drive costs
- Tracks set-up costs associated with each batch and product line
- Analyzes activities rather than input resources
- Allows cost drivers to vary across the firm.

- Cost analysts attempt to identify cause-and-effect cost drivers for allocating overhead costs.
- Reduces overhead cost pools that are allocated with an arbitrary allocation base

Classifying ABC Cost Drivers

Classify cost drivers into one of four categories:

1. Unit-level
2. Batch-level
3. Product-level
4. Production-sustaining

ABC allows us to isolate costs from production decisions

- This is core to overproduction, death spirals, and incorrect outsourcing choices.

ABC allows us to isolate costs from production decisions

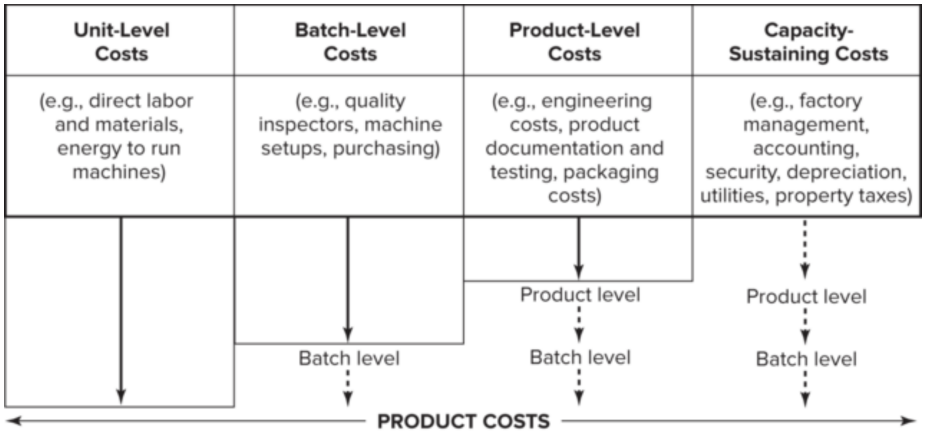

Figure 1: ABC

fig 11-1

Unit-level Costs

Defined: activities performed at least once for each unit of product

Total amount of unit-level costs is a linear function of the quantity produced.

Examples:

Direct labor and direct material

Machine servicing related to number of units produced

Batch-level Costs

Defined: activities performed once for each batch of products

Batch-level costs are independent of the number of units in the batch.

Examples:

Indirect labor, such as production supervisors

Machine set-ups

Moving batches

Product-level Costs

Defined: activities that support production of a product type or model

Product-level costs do not vary with the number of batches produced.

Examples:

Engineering support

Equipment usable for only one product line

Production-sustaining Costs

Defined: all remaining activities required for overall operation of production facility

Production-sustaining costs do not depend on number of units, batches, or product lines.

Examples:

Plant security, insurance, general maintenance

Plant accounting and administration

Example: ABC vs. Absorption

Similarities: Direct and unit-level costs are allocated the same.

Differences: ABC allocates more indirect costs to products with smaller production volume and more complex set-up (models 801 and 901).

Model number	105	205	305	801	901
Batches per year (100 units/batch)	800	1,000	600	400	200
Absorption cost per unit	$162	$169	$173	$206	$217

ABC cost per unit $157 $162 $164 $234 $242

Difference -3% -4% -5% +14% +12%

Also review Self-Study problem.

ABC and Decision Making

ABC improves pricing decisions because product costs are presumably more accurate estimates of opportunity cost.

Low-volume high-complexity products should get higher prices or be dropped.

ABC focuses attention on reducing use of activities that are most associated with costs.

Review the Insteel Industries example.

ABC and Decision Control

ABC requires more monitoring.

Time to identify and measure activities

Meetings to resolve disputes over activity drivers

ABC shifts decision rights over activity drivers to lower-level managers with specialized knowledge of the relation between costs and activities.

Departmental managers could pick cost drivers that maximize their performance rewards.

What is the Optimal Number of Cost Drivers?

Consider Figure 11-4

The optimal number of drivers is less for decision management and control than it is for decision management only.

Explain this.

ABC Measures Costs, Not Benefits

ABC does not measure the benefits of producing/selling multiple products.

Firms offer multiple products because of economies of scale and scope.

ABC allocates common costs – not the common or joint benefits of multiple products.

History of ABC

Pre-cursors of ABC were efforts to improve cost allocations in 19th century businesses.

(See side-bar examples).

Activity-based costing terminology was invented and popularized in the late 1980s to early 1990s.

In the later 1990s and up to the present, the success of ABC systems has been mixed and alternative strategies have been successfully applied to achieve some of the same benefits of ABC with less cost.

ABC Cost Accumulation and Allocation

The bookkeeping for ABC is similar to the two-stage allocation procedure in

Figure 9-4.

1. Unit-level costs are directly assigned to products.
2. Indirect costs are accumulated in the appropriate activity cost pools.
3. Indirect costs are allocated from the activity cost pools using the batch, product, and production-sustaining cost drivers.

Acceptance of ABC

Although many controllers are interested in ABC, most are skeptical that the benefits of ABC outweigh its implementation costs.

ABC for strategic analysis rather than replace absorption costing:

Absorption required for external reporting

ABC for strategic analysis and special studies

ABC is most likely to be adopted by:

Manufacturers in price-sensitive competitive markets

Large plants with many different products and processes

Cost Allocation and Automation

In highly automated plants where direct labor costs are a small share of total costs, using machine hours as an activity base gives more accurate cost than direct labor.

Automation improves efficiency and eliminates bottlenecks so that less indirect labor is needed for moving, inspecting, and expediting products.

Cost Allocation as a Tax System

(Motivation versus Accuracy)

Cost allocations are an internal tax system that motivate mangers to use less of resources with high cost allocations. (Chapter 7).

Cycle time: Zytec uses total time to manufacture the product as its allocation base to motivate managers to reduce cycle time.

Direct labor: Hitachi allocates overhead on direct labor hours so that managers improve automation as a way to eliminate costly direct labor.