Activity-Based Costing: A Tool to Aid Decision Making

Once upon a time...

- In 19°and most of the 20° centuries cost systems were simple and satisfactory.
- Usually they relied on allocation basis such as labour-hours and machine-hours for allocating overhead costs to products (labour-intensive production processes).
- Usually one overhead pool (the plant) or few pools (departments) were used.
- And usually, most companies produced very limited variety of products.

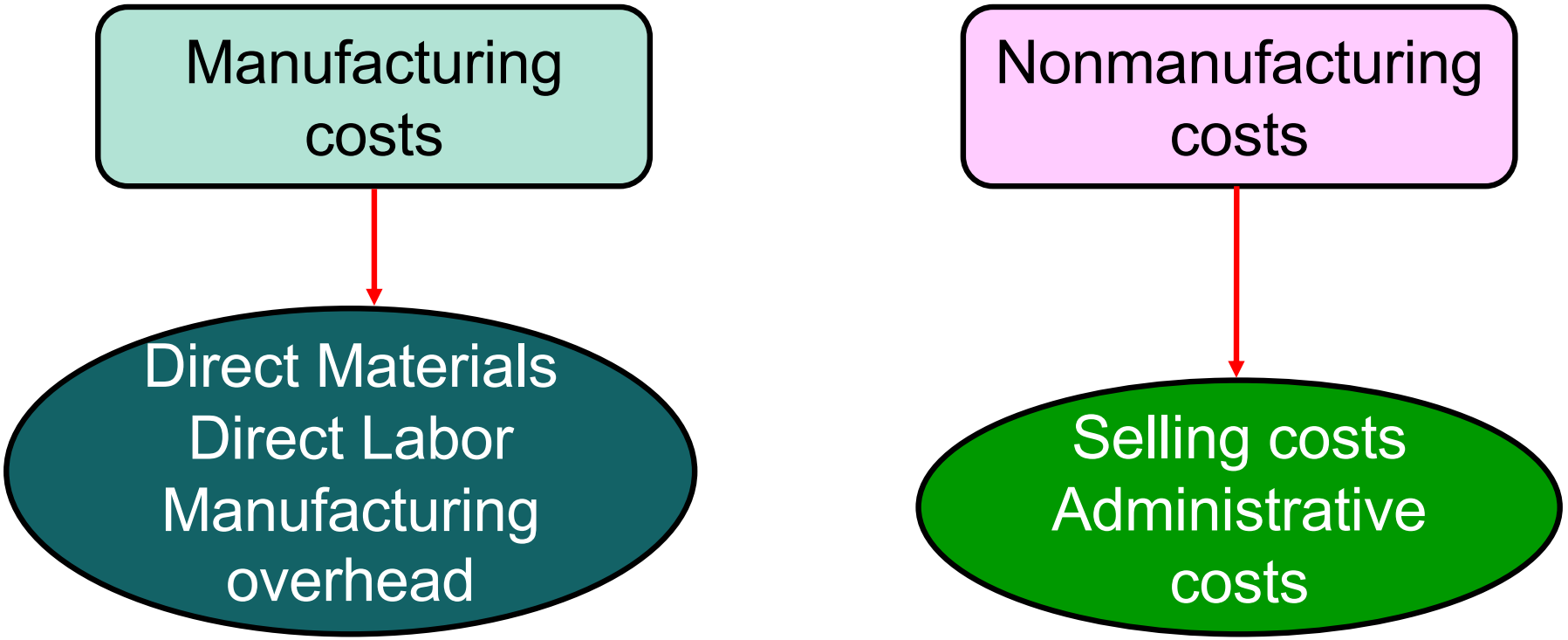
Today things are different

- Many tasks previously done by direct laborers are performed by automated equipment (which are overhead).
- New products and services at an accelerating rate differ in volume, batch size, and complexity (product and service diversity).
- More overhead resources (product schedulers, design engineers) are required, which are not connected to direct labour hours or machine-hours.

→ *Traditional allocation basis poses the risk that reported unit* ***product costs*** *would be distorted and misleading for decision-making purposes.*

Manufactoring vs non manufacturing costs

Manufacturing firms usually separate their costs into 2 broad categories



Assigning Costs to Cost Objects

Direct costs

- Costs that can be easily and conveniently traced to a unit of product or other cost object.
- Examples: direct material and direct labor

Indirect costs

- Costs that cannot be easily and conveniently traced to a unit of product or other cost object.
- Example: manufacturing overhead

How can we assign indirect costs to cost objects?

…..

Allocation basis

Example – Baxter Battery Company

Baxter Battery Company
Income Statement
Year Ended December 31, 20X0

Sales		$ 50,000,000
Cost of goods sold		
Direct materials	$ 15,000,000	
Direct labor	12,000,000	
Manufacturing overhead	14,000,000	41,000,000
Gross margin		9,000,000
Selling and administrative expenses		
Shipping expense	3,000,000	
Marketing expense	2,000,000	
General administrative expense	6,000,000	11,000,000
Net operating loss		$ (2,000,000)

The company makes two types of automobile batteries—SureStart (a standard battery) and LongLife (a deluxe battery). Baxter reported its first loss ever.

Product Margins Computed Using the Traditional Cost System – Part 1

The first step in computing product margins is to gather each product's sales and direct cost data.

	SureStarts	LongLifes	Total
Sales	$ 31,300,000	$ 18,700,000	$ 50,000,000
Direct costs			
Direct material	9,000,000	6,000,000	15,000,000
Direct labor	7,000,000	5,000,000	12,000,000

Product Margins Computed Using the Traditional Cost System – Part 2

The second step in computing product margins is to compute the plantwide overhead rate.

Manufacturing Overhead Costs at Baxter Battery

Production Department	
Indirect factory wages	$ 6,000,000
Factory equipment depreciation	3,500,000
Factory utilities	2,500,000
Factory building lease	2,000,000
Total manufacturing overhead	$ 14,000,000

Plantwide manufacturing overhead rate = $\frac{\$14,000,000}{800,000 \text{ MH}}$ = **$17.50 per machine-hour**

	Machine-hours
SureStarts (800,000 @ 0.60 hours)	480,000
LongLifes (400,000 @ 0.80 hours)	320,000
Total machine-hours	800,000

Product Margins Computed Using the Traditional Cost System – Part 3

The third step in computing product margins is to allocate manufacturing overhead to each product.

	Machine Hours	Overhead Rate	Overhead Allocated
SureStarts	480,000	$ 17.50	$ 8,400,000
LongLifes	320,000	17.50	5,600,000
Total overhead allocated to products			$ 14,000,000

480,000 hours × $17.50 per hour = $8,400,000

Product Margins Computed Using the Traditional Cost System – Part 4

The fourth step is to actually compute the product margins.

	SureStarts		LongLifes		Total	
Sales		$ 31,300,000		$ 18,700,000		$ 50,000,000
Cost of goods sold						
Direct materials	$ 9,000,000		$ 6,000,000		$ 15,000,000	
Direct labor	7,000,000		5,000,000		12,000,000	
Manufacturing overhead	8,400,000	24,400,000	5,600,000	16,600,000	14,000,000	41,000,000
Product margin		$ 6,900,000		2,100,000		9,000,000
Selling and administrative						11,000,000
Net operating loss						$ (2,000,000)

Shipping expense	$ 3,000,000
Marketing expense	2,000,000
General administrative expense	6,000,000
	$ 11,000,000

What do we understand looking at these numbers?

Learning Objective 1

Understand activity-based costing and how it differs from a traditional costing system.

Activity–Based Costing (ABC): Key Definition

ABC is a costing method designed to provide managers with cost information for strategic and other decisions that potentially affect **capacity**, and therefore, “fixed” as well as variable costs.

Activity–Based Costing (ABC): Key Definition

It is a cost accounting system that usually replaces the cost accounting system based on cost centers (a traditional cost system based on the firm's organizational structure).

One of the main benefits of the ABC method is that the focus on resource management cuts across organizational units.

The focus is on **activities**, defined as combinations of people, technologies, raw materials, and environmental conditions aimed at achieving a final output (Kaplan et al. 1998)

Activity–Based Costing (ABC): Key Definition

The basic idea is that **resources are consumed by activities** carried out by organizations, while **activities are consumed by the services/goods they provide** (Brimson, 1998).

By consuming resources, activities generate costs.

These resources often include core competencies that affect the organization's ability to provide high-quality products or services.

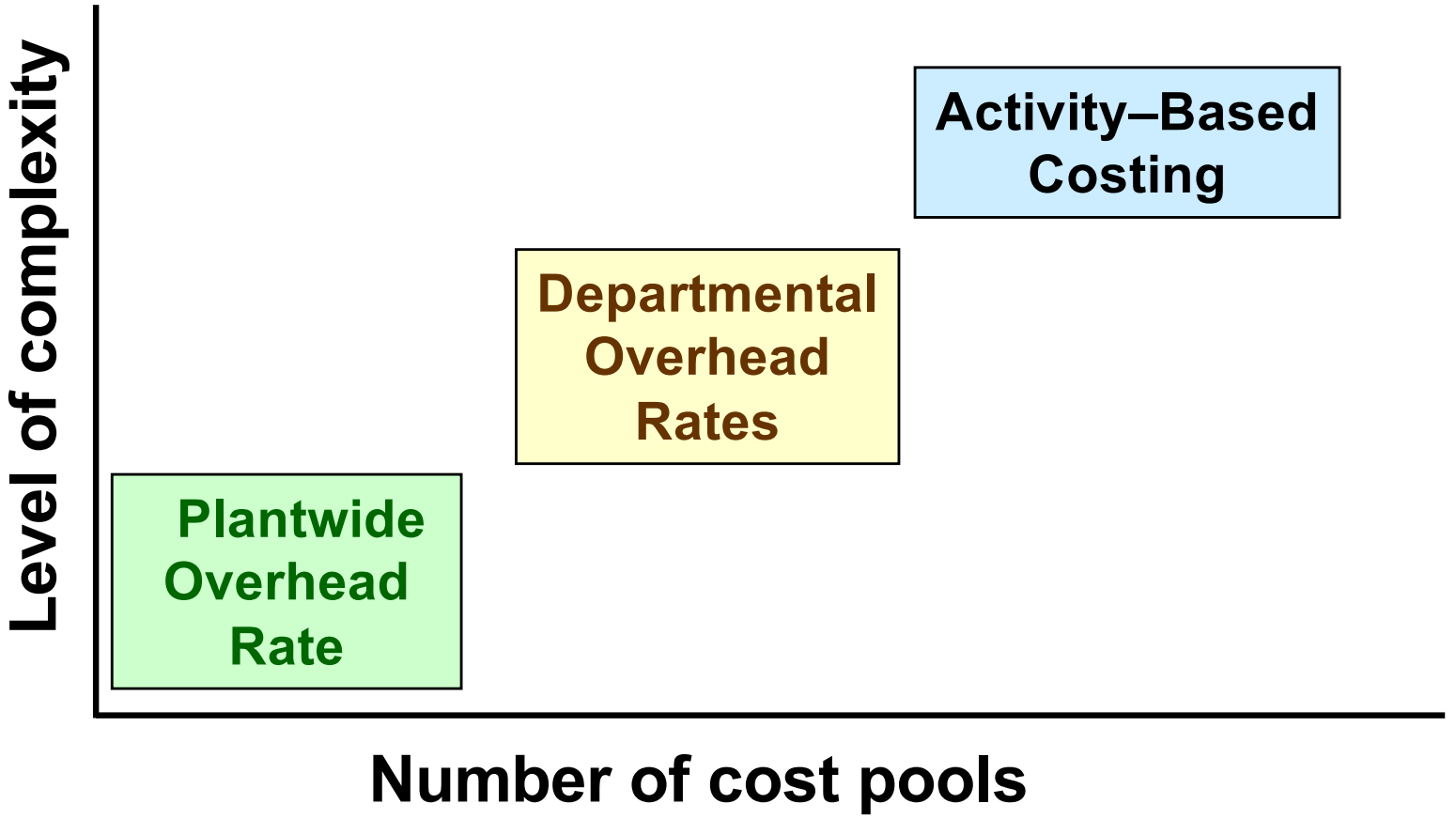
How Costs are Treated Under Activity–Based Costing – Part 1

In ABC, the distinction between **nonmanufacturing and manufacturing costs disappears** because all costs are analysed according to degree of ”consumption of resources” by the activities.

In ABC, **nonmanufacturing as well as manufacturing costs** may be assigned to products, but only on a cause-and-effect basis.

How Costs are Treated Under Activity–Based Costing – Part 2

ABC differs from traditional cost accounting because numerous overhead cost pools are used.



How Costs are Treated Under Activity–Based Costing – Part 3

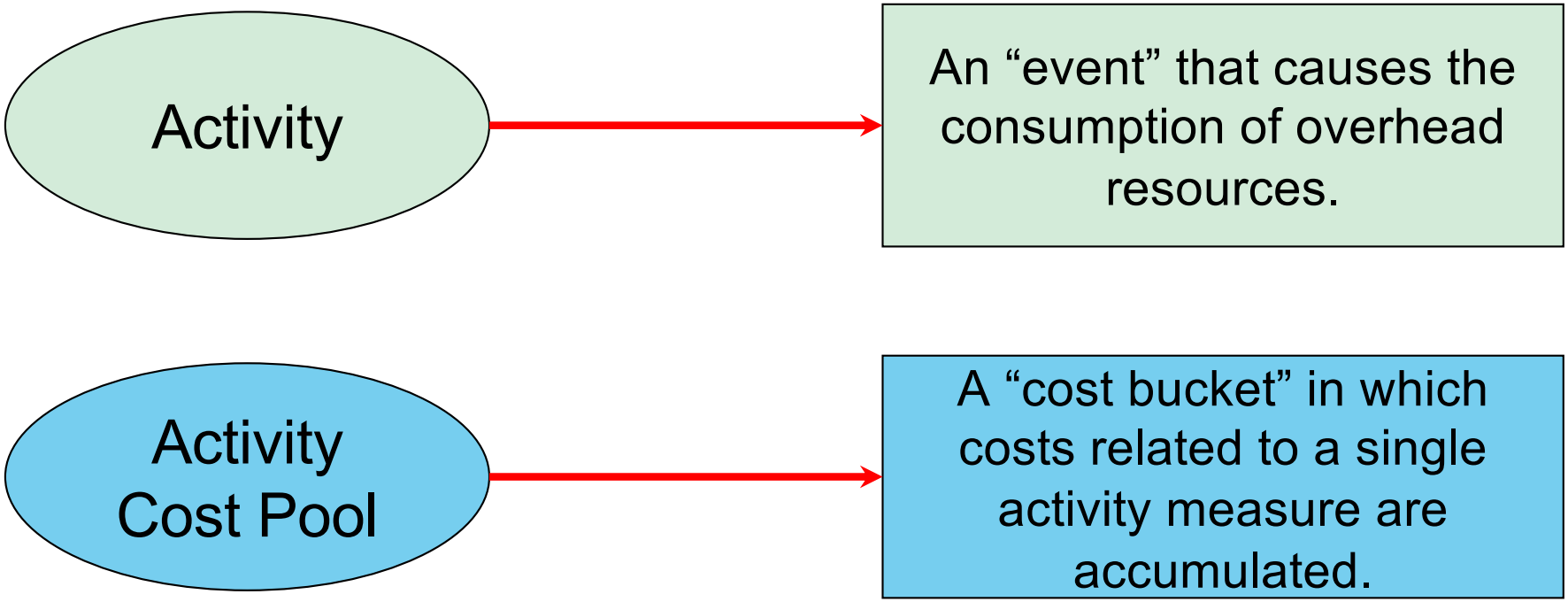
Each ABC cost pool has its own **unique measure of activity**, while traditional cost systems usually rely on **direct labor hours** and/or **machine hours** to allocate all overhead costs to products.

Direct labor and machine hours work correctly when changes in the quantity of the base are correlated with changes in the overhead costs being assigned using the base.

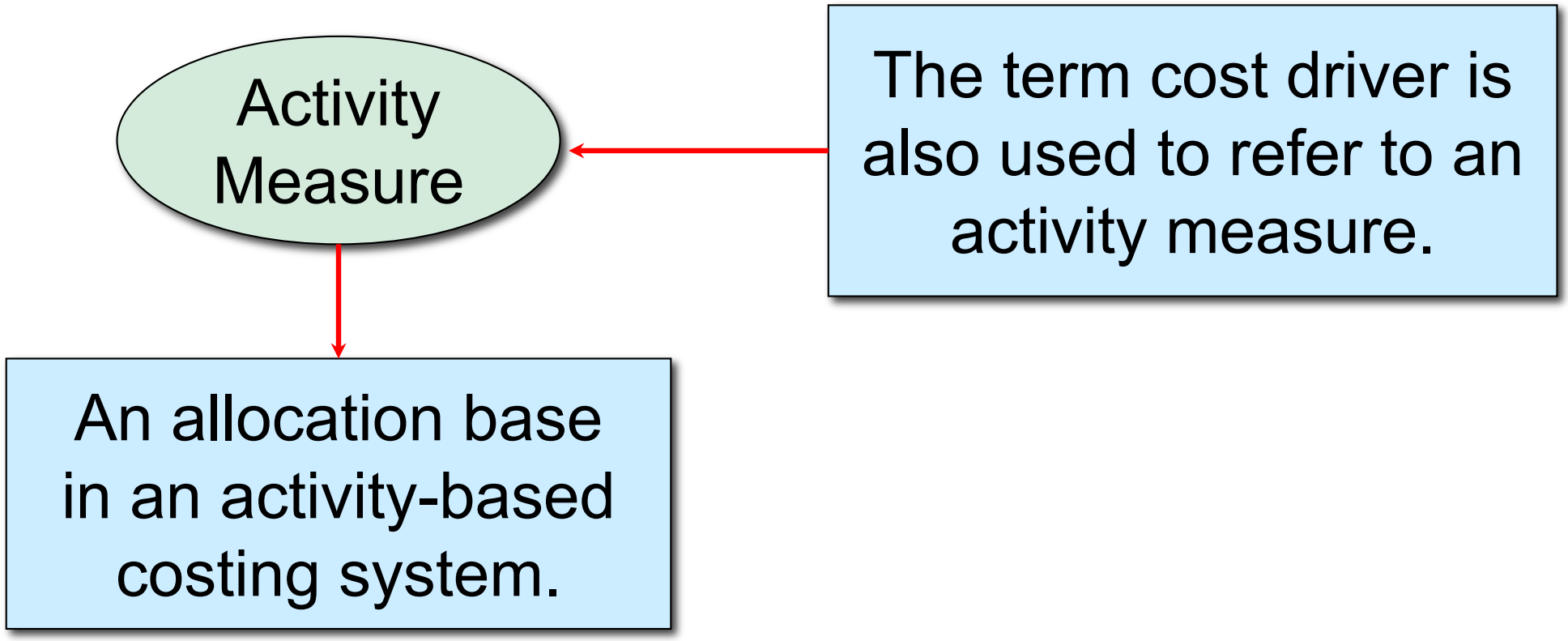
How Costs are Treated Under Activity–Based Costing – Part 4

Relying exclusively on direct labor hours and/or machine hours to assign overhead costs to products has come under increased scrutiny since direct labor and overhead costs have been moving in **opposite directions** and the **variety of products** produced by companies has increased.

Key Definitions and Concepts – Part 1



Key Definitions and Concepts – Part 2



Key Definitions and Concepts – Part 3

Two common types of activity measures:



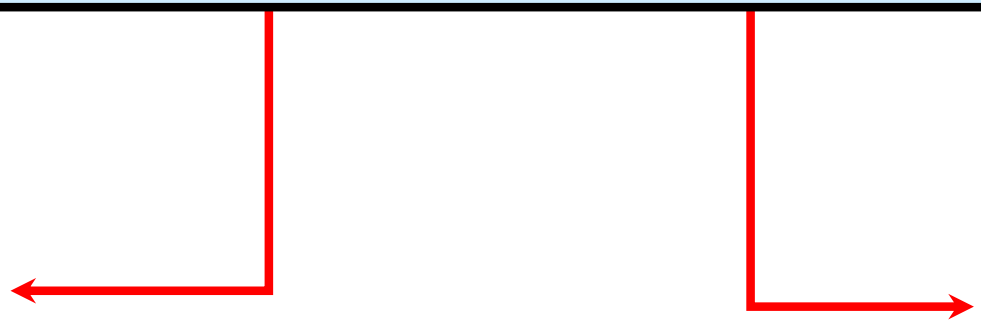
Transaction driver

Simple count of the number of times an activity occurs.

i.e. number of bills sent out to a customer

Key Definitions and Concepts – Part 3

Two common types of activity measures:



Duration driver

i.e. amount of time spent in preparing individual bills for customers

A measure of the amount of time needed for an activity.

Key Definitions and Concepts – Part 4

Traditional cost systems rely on allocation bases that are driven by the volume of production.

ABC defines five levels of activity that largely do not relate to the volume of units produced.

Levels of activities



Levels of activities

Unit-level	Batch level	Product level
• activities performed each time a unit is produced • these costs are proportional to the number of units produced • i.e. provision of power to run equipment (power consumed depends on the volume)	• activities performed each time a batch is handled or processed, regardless the units in each batch • i.e. set up equipment, arranging shipments to customer	• activities related to single product regardless how many batches are run or units produced • i.e. product design, advertising

Levels of activities

Customer-level	Organization sustaining
• activities related to specific customers • i.e. sales calls, general technical support...	• activities which do not depend on products volume, number of customers... • i.e. heating the factory, cleaning offices, preparing annual report..

Example

Wester River Expeditions runs river rafting trips on the Colorado. One of the most popular trips is a six-day trip down the Grand Canyon.

The company runs trips of 1 or 2 rafts, each of which carries 2 guides and up to 18 guests. It provides also all meals on the trip prepared by the guides. Each guest is given a mug to use and to take home at the end of the trip.

Hierarchy of activities: which is the unit level? Which is the batch level? Which is the product level?

Example

Unit level is the guest →costs of the mug are unit level costs

Batch level is the raft → wages paid to the guides are batch level costs

What's about the costs of the food served? Unit or batch level?

We need more info about the activities run by the company…

Because standard menu is created for each day of the trip and it is prepared the day before the trip begins, it is not practical to adjust the amount of food for the actual number of guests of each trip.

Therefore most of the food comes pre-packaged in large lots.

It seems more correct to consider it a batch level costs…

Implementation of ABC

5 steps:

1. Define activities, activities cost pools, activity measures
2. Assign overhead costs to cost pools
3. Calculate activity rates
4. Assign overhead costs to cost objects
5. Prepare management reports

Define Activities, Activity Cost Pools, and Activity Measures

This is the most time consuming step

It is the foundation for the system

1st issue: how to define activities

A common procedure requires to interview people and ask them to describe their major activities.

Usually the result is a VERY LONG list of activities

Define Activities, Activity Cost Pools, and Activity Measures

2nd issue: length of activities' list

Great number of activities? Or reduced number?

Greater number: more accurate costs info

Greater number: more costly to design, implement, maintain and use

Therefore we need a handful list defined by combining similar activities

Define Activities, Activity Cost Pools, and Activity Measures

3rd issue: combining activities

Activities are grouped together at appropriate level

Highly correlated activities are usually combined together

i.e. number of customer order received + the number of completed customer orders shipped (2 batch level activities)

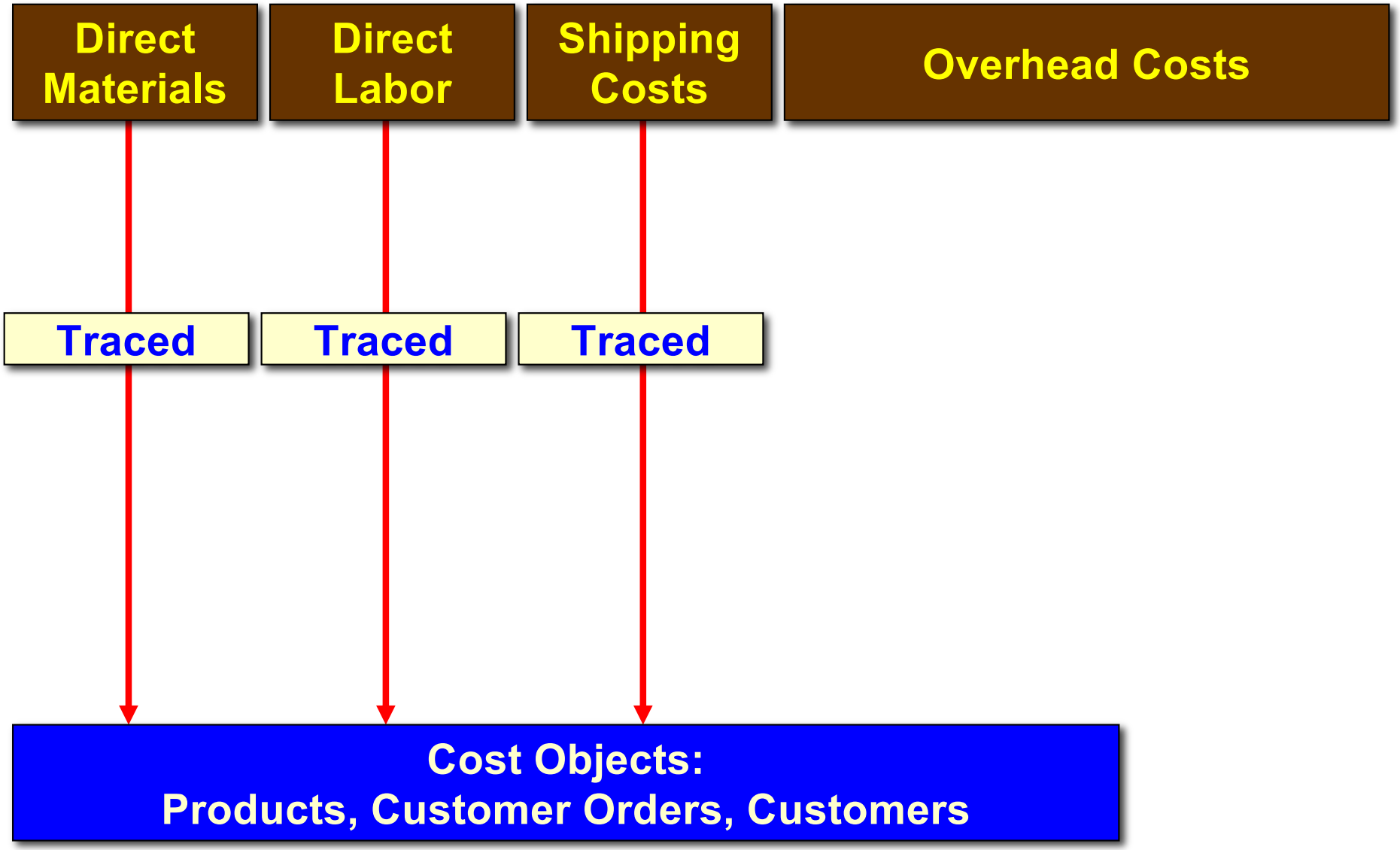
Keep in mind that the activities are “firm specific”

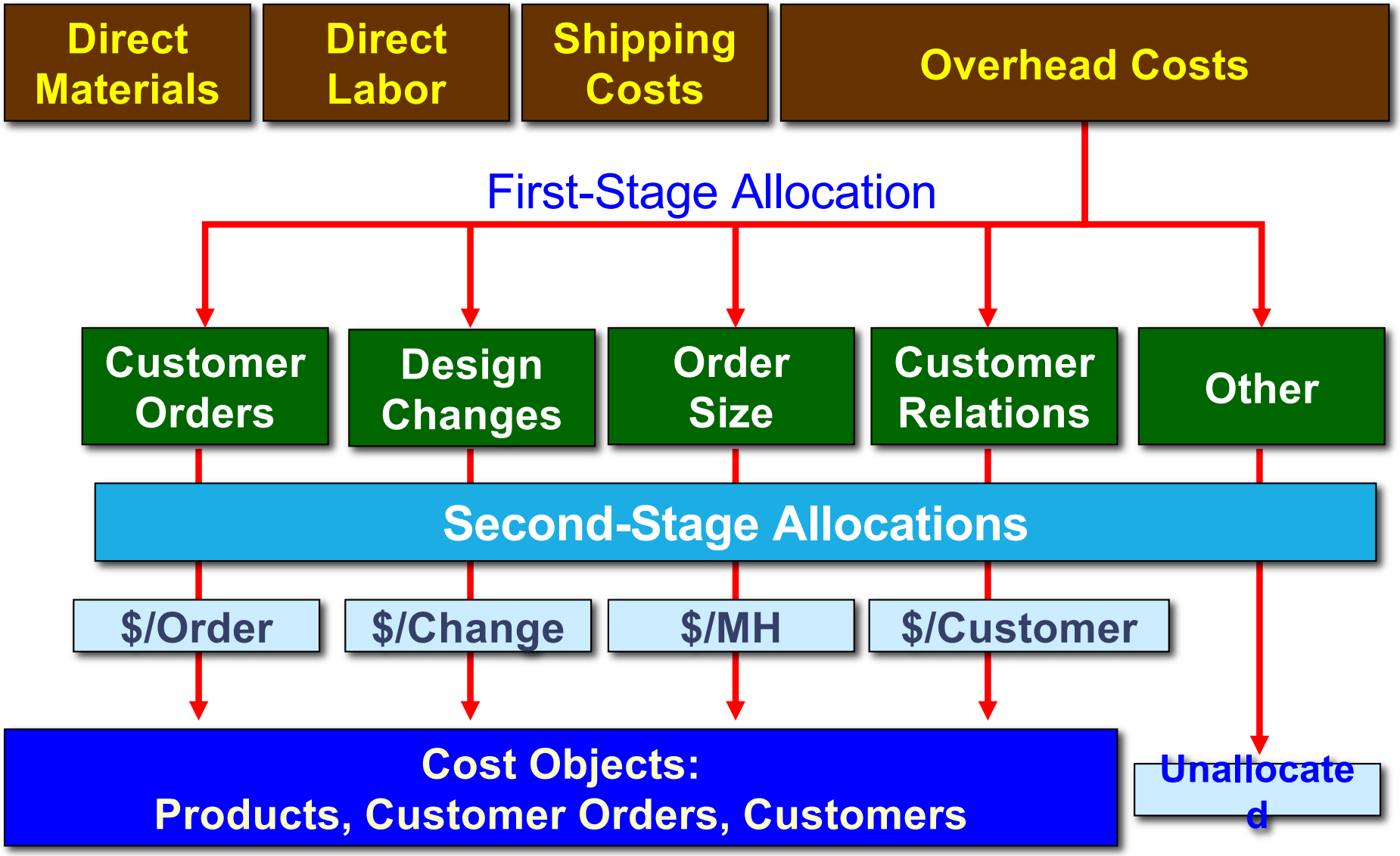
Example – Baxter Battery Company

Baxter Battery Company
Income Statement
Year Ended December 31, 20X0

Sales		$ 50,000,000
Cost of goods sold		
Direct materials	$ 15,000,000	
Direct labor	12,000,000	
Manufacturing overhead	14,000,000	41,000,000
Gross margin		9,000,000
Selling and administrative expenses		
Shipping expense	3,000,000	
Marketing expense	2,000,000	
General administrative expense	6,000,000	11,000,000
Net operating loss		$ (2,000,000)

The company makes two types of automobile batteries—SureStart (a standard battery) and LongLife (a deluxe battery). Baxter reported its first loss ever.


Direct Materials
Direct Labor
Shipping Costs
Overhead Costs
Traced
Traced
Traced
Cost Objects:
Products, Customer Orders, Customers


Direct Materials
Direct Labor
Shipping Costs
Overhead Costs
First-Stage Allocation
Customer Orders
Design Changes
Order Size
Customer Relations
Other
Second-Stage Allocations
$/Order
$/Change
$/MH
$/Customer
Cost Objects:
Products, Customer Orders, Customers
Unallocated

Example – Baxter Battery Company

5 activity pools are defined:

Customer Orders - assigned all costs of resources that are consumed by taking and processing customer orders.

Which is the level involved?

Product Design - assigned all costs of resources consumed by designing products.

Which is the level involved?

Example – Baxter Battery Company

5 activity pools are defined:

Customer Orders - assigned all costs of resources that are consumed by taking and processing customer orders.

Which is the level involved?

It's a batch level activity because order generates work that occurs regardless of whether the order is for 1 unit or 1,000 units.

Example – Baxter Battery Company

5 activity pools are defined:

Product Design - assigned all costs of resources consumed by designing products.

Which is the level involved?

It's a product level activity because the amount of design work on new products does not depend on the number of units ordered or batches run.

Example – Baxter Battery Company

5 activity pools are defined:

Order Size - assigned all costs of resources consumed as a consequence of the number of units produced (i.e. power to run the machines, some equipment depreciations..).

Which is the level involved?

Customer Relations - assigned all costs associated with maintaining relations with customers (i.e. costs of sales calls).

Which is the level involved?

Example – Baxter Battery Company

5 activity pools are defined:

Order Size - assigned all costs of resources consumed as a consequence of the number of units produced (i.e. power to run the machines, some equipment depreciations..)..

Which is the level involved?

It's a unit level activity because each unit requires some of these resources.

Example – Baxter Battery Company

5 activity pools are defined:

Customer Relations - assigned all costs associated with maintaining relations with customers (i.e. costs of sales calls).

Which is the level involved?

It’s a customer level.

Example – Baxter Battery Company

5 activity pools are defined:

Other - assigned all organization-sustaining costs and unused capacity costs. They are all overhead costs which are not associated with customer orders, product design, the size of the orders..

Which is the level involved?

Example – Baxter Battery Company

5 activity pools are defined:

Other - assigned all organization-sustaining costs and unused capacity costs. They are all overhead costs which are not associated with customer orders, product design, the size of the orders..

Which is the level involved?

It’s a organization sustaining activity

Example – Baxter Battery Company

At Baxter Battery, the ABC team selected the following activity cost pools and activity measures:

Activity Cost Pools at Baxter Battery

Activity Cost Pool		Activity Measure
Customer orders	→	Number of customer orders
Product Design	→	Number of product designs
Order size	→	Machine-hours
Customer relations	→	Number of active customers
Other	→	Not applicable

Learning Objective 2

Assign costs to cost pools using a first-stage allocation.

Assign Overhead Costs to Activity Cost Pools – Part 1

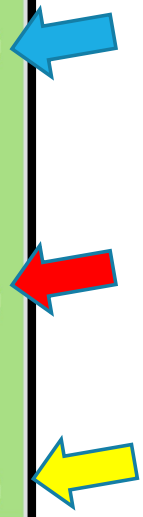
In the following slides **the annual overhead costs** (both manufacturing and non-manufacturing) are shown.

Data are organized by department (Production, marketing, general administrative…).
It's a typical functional orientation: notice that the total costs for the Production Dept equal the total manufacturing costs from the income statement (14,000,000 - see slide).
Notice also that the total costs for the General Administrative and Marketing Depts (6,000,000 and 2,000,000) equal the Marketing and General Admin expenses shown in the following slide.

Three costs included in the Income Statement are excluded from the costs shown in the following table (direct materials, direct labor, shipping expenses).

Assign Overhead Costs to Activity Cost Pools – Part 1

Overhead Costs at Baxter Battery (Manufacturing and Nonmanufacturing)		
Production Department		
Indirect factory wages	$ 6,000,000	
Factory equipment depreciation	3,500,000	
Factory utilities	2,500,000	
Factory building lease	2,000,000	$ 14,000,000
General Administrative Department		
Administrative wages and salaries	4,000,000	
Office equipment depreciation	900,000	
Administrative building lease	1,100,000	6,000,000
Marketing Department		
Marketing wages and salaries	1,500,000	
Selling expenses	500,000	2,000,000
Total overhead costs		$ 22,000,000



Example – Baxter Battery Company

Baxter Battery Company
Income Statement
Year Ended December 31, 20X0

Sales		$ 50,000,000
Cost of goods sold		
Direct materials	$ 15,000,000	
Direct labor	12,000,000	
Manufacturing overhead	14,000,000	41,000,000
Gross margin		9,000,000
Selling and administrative expenses		
Shipping expense	3,000,000	
Marketing expense	2,000,000	
General administrative expense	6,000,000	11,000,000
Net operating loss		$ (2,000,000)

Assign Overhead Costs to Activity Cost Pools – Part 2

Direct materials, direct labor, and shipping are excluded because Baxter Battery's existing cost system can directly trace these costs to products or customer orders.

Production Department		
Indirect factory wages	$ 6,000,000	
Factory equipment depreciation	3,500,000	
Factory utilities	2,500,000	
Factory building lease	2,000,000	$ 14,000,000
General Administrative Department		
Administrative wages and salaries	4,000,000	
Office equipment depreciation	900,000	
Administrative building lease	1,100,000	6,000,000
Marketing Department		
Marketing wages and salaries	1,500,000	
Selling expenses	500,000	2,000,000
Total overhead costs		$ 22,000,000

Assign Overhead Costs to Activity Cost Pools – Part 3

At Baxter Battery, the following distribution of resource consumption across activity cost pools is determined.

	Activity Cost Pools					
	Customer Orders	Product design	Order Size	Customer Relations	Other	Total
Production Department						
Indirect factory wages	30%	30%	20%	10%	10%	100%
Factory equipment depreciation	20%	10%	60%	0%	10%	100%
Factory utilities	0%	10%	60%	0%	30%	100%
Factory building lease	0%	0%	0%	0%	100%	100%
General Administrative Department						
Administrative wages and salaries	30%	10%	10%	30%	20%	100%
Office equipment depreciation	30%	10%	0%	20%	40%	100%
Administrative building lease	0%	0%	0%	0%	100%	100%
Marketing Department						
Marketing wages and salaries	30%	10%	0%	50%	10%	100%
Selling expenses	20%	0%	0%	70%	10%	100%

Assign Overhead Costs to Activity Cost Pools – Part 4

	Customer Orders
Production Department	
Indirect factory wages	$ 1,800,000
Factory equipment depreciation	
Factory utilities	
Factory building lease	
General Administrative Department	
Administrative wages and salaries	
Office equipment depreciation	
Administrative building lease	
Marketing Department	
Marketing wages and salaries	
Selling expenses	
Total	

Overhead Costs at Baxter Battery
(Manufacturing and Nonmanufacturing)

Production Department		
Indirect factory wages	$ 6,000,000	
Factory equipment depreciation	3,500,000	
Factory utilities	2,500,000	
Factory building lease	2,000,000	$ 14,000,000
General Administrative Department		
Administrative wages and salaries	4,000,000	
Office equipment depreciation	900,000	
Administrative building lease	1,100,000	6,000,000
Marketing Department		
Marketing wages and salaries	1,500,000	
Selling expenses	500,000	2,000,000
Total overhead costs		$ 22,000,000

Indirect factory wages	$6,000,000
Percent consumed by customer orders	30%
	$1,800,000

Assign Overhead Costs to Activity Cost Pools – Part 5

Overhead Costs at Baxter Battery
(Manufacturing and Nonmanufacturing)

Production Department		
Indirect factory wages	$ 6,000,000	
Factory equipment depreciation	3,500,000	
Factory utilities	2,500,000	
Factory building lease	2,000,000	$ 14,000,000
General Administrative Department		
Administrative wages and salaries	4,000,000	
Office equipment depreciation	900,000	
Administrative building lease	1,100,000	6,000,000
Marketing Department		
Marketing wages and salaries	1,500,000	
Selling expenses	500,000	2,000,000
Total overhead costs		$ 22,000,000

	Customer Orders
Production Department	
Indirect factory wages	$ 1,800,000
Factory equipment depreciation	700,000
Factory utilities	
Factory building lease	
General Administrative Department	
Administrative wages and salaries	
Office equipment depreciation	
Administrative building lease	
Marketing Department	
Marketing wages and salaries	
Selling expenses	
Total	

Factory equipment depreciation	$3,500,000
Percent consumed by customer orders	20%
	$ 700,000

Assign Overhead Costs to Activity Cost Pools – Part 6

	Activity Cost Pools					
	Customer Orders	Product design	Order Size	Customer Relations	Other	Total
Production Department						
Indirect factory wages	$ 1.800.000	$ 1.800.000	$ 1.200.000	$ 600.000	$ 600.000	$ 6.000.000
Factory equipment depreciation	700.000	350.000	2.100.000	-	350.000	3.500.000
Factory utilities	-	250.000	1.500.000	-	750.000	2.500.000
Factory building lease	-	-	-	-	2.000.000	2.000.000
General Administrative Department						
Administrative wages and salaries	1.200.000	400.000	400.000	1.200.000	800.000	4.000.000
Office equipment depreciation	270.000	90.000	-	180.000	360.000	900.000
Administrative building lease	-	-	-	-	1.100.000	1.100.000
Marketing Department						
Marketing wages and salaries	450.000	150.000	-	750.000	150.000	1.500.000
Selling expenses	100.000	-	-	350.000	50.000	500.000
Total	$ 4.520.000	$ 3.040.000	$ 5.200.000	$ 3.080.000	$ 6.160.000	$ 22.000.000

Learning Objective 3

Compute activity rates for cost pools.

Calculate Activity Rates – Part 1

The ABC team determines that Baxter Battery will have these total activities for each activity cost pool:

- 10,000 customer orders,
- 4,000 product designs,
- 800,000 machine-hours,
- 2,000 customers served.

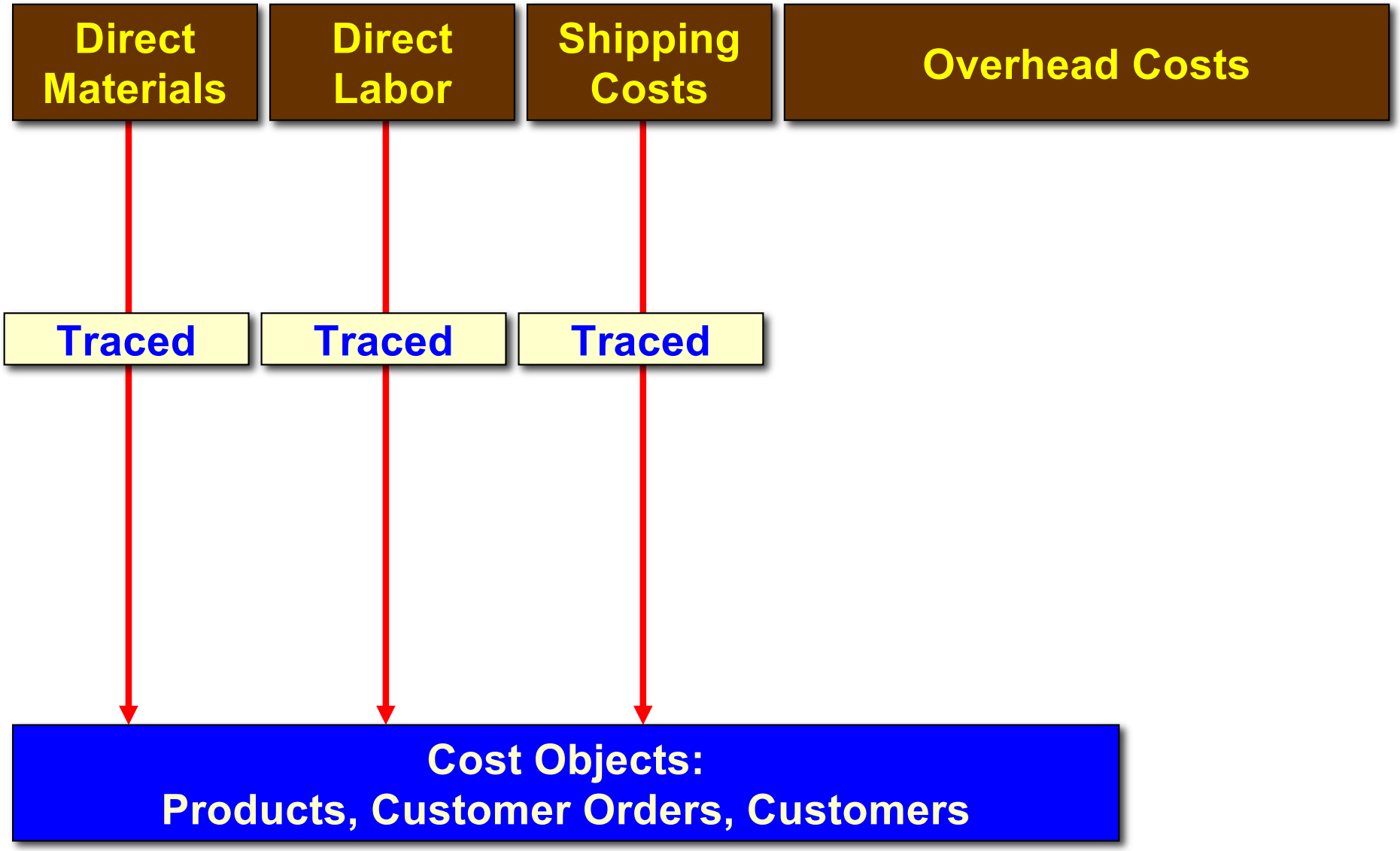
Now the team can compute the individual activity rates by dividing the total cost for each activity by the total activity levels.

Calculate Activity Rates – Part 2

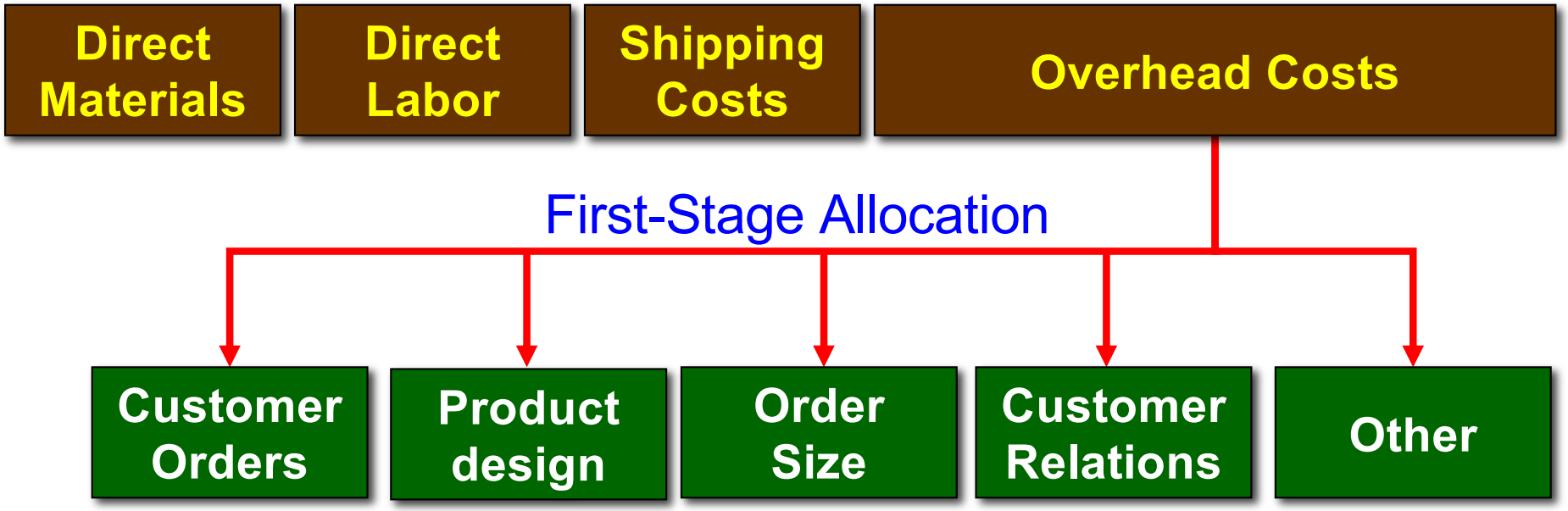
Computation of Activity Rates			
Activity Cost Pools	(a) *Total Cost*	(b) *Total Activity*	(a) ÷ (b) *Activity Rate*
Customer orders	$ 4.520.000	10,000 orders	$452 per order
Product design	3.040.000	4,000 changes	$760 per change
Order size	5.200.000	800,000 MHs	$6.50 per MH
Customer relations	3.080.000	2,000 customers	$1,540 per customer
Other	6.160.000	Not applicable	Not applicable
Total	$ 22.000.000		

These are organization-sustaining costs and will not be assigned to products or customers.

Calculate Activity Rates – Part 3

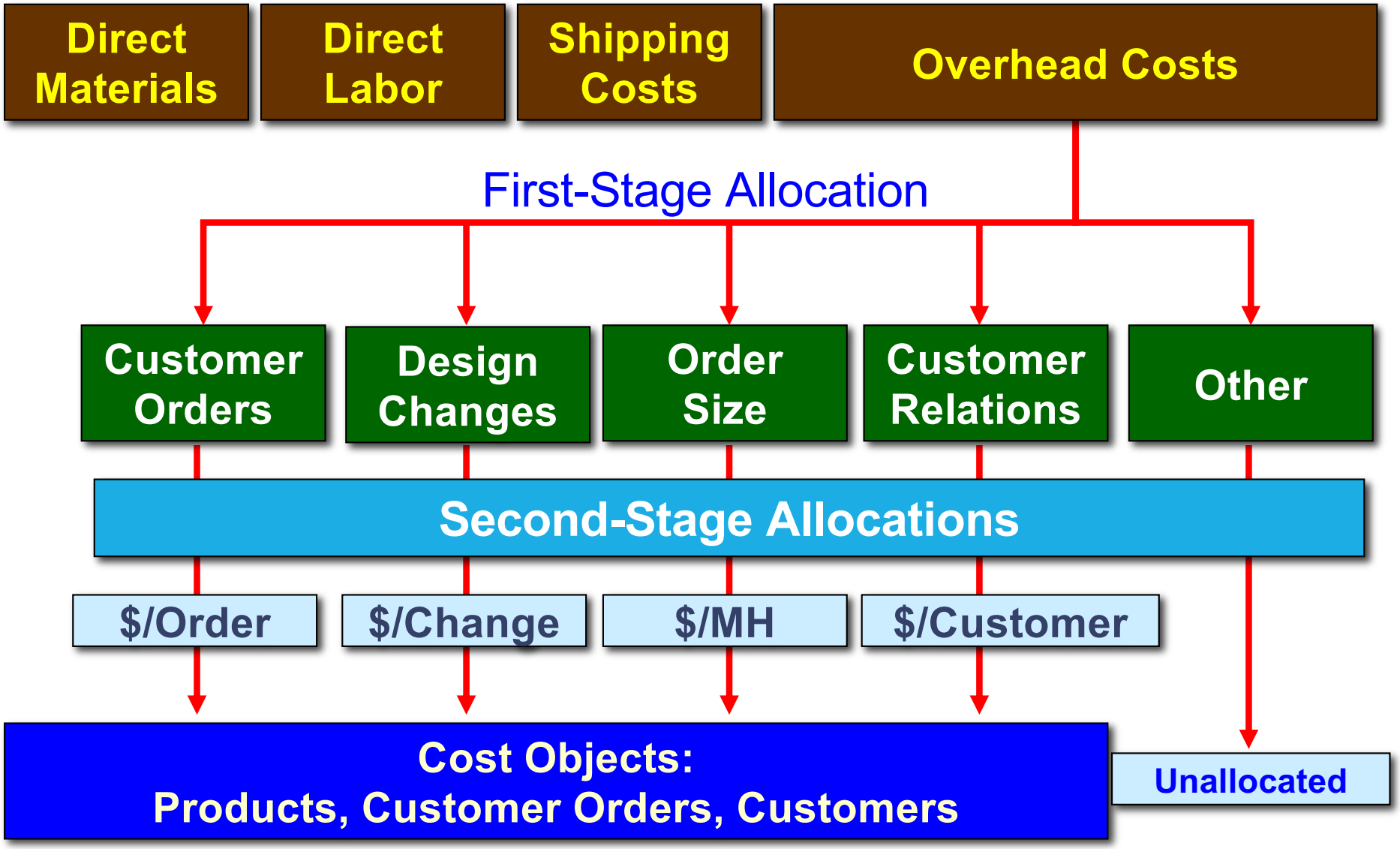


Calculate Activity Rates – Part 4



Cost Objects:
Products, Customer Orders, Customers

Calculate Activity Rates – Part 5



Learning Objective 4

Assign costs to a cost object using a second-stage allocation.

Assigning Overhead to Products – Part 1

Baxter Battery Information

SureStart

1. Requires no new design resources.
2. 800,000 batteries ordered with 4,000 separate orders.
3. Each SureStart requires 36 minutes of machine time for a total of 480,000 machine-hours.

LongLife

1. Requires new design resources.
2. 400,000 batteries ordered with 6,000 separate orders.
3. 4,000 custom designs prepared.
4. Each LongLife requires 48 minutes of machine time for a total of 320,000 machine-hours.

Assigning Overhead to Products – Part 2

Overhead Cost for the SureStart			
Activity Cost Pools	(a) *Activity Rate*	(b) *Activity*	(a) × (b) *ABC Cost*
Customer orders	$ 452	4.000	$ 1.808.000
Product design	$ 760	-	-
Order size	$ 6,5	480.000	3.120.000
Total			$ 4.928.000

Overhead Cost for the LongLife			
Activity Cost Pools	(a) *Activity Rate*	(b) *Activity*	(a) × (b) *ABC Cost*
Customer orders	$ 452	6.000	$ 2.712.000
Product Design	$ 760	4.000	3.040.000
Order size	$ 6,5	320.000	2.080.000
Total			$ 7.832.000

$4,928,000 + $7,832,000 + $9,240,000 (not assigned) = $22,000,000

Assigning Overhead to Customers – Part 3

Let's take a look at how Baxter Battery's system works for just **one of the 2,000 customers** – **Acme Auto Parts** who placed a total of 12 orders. Note that the four orders for LongLifes required a design change.

Orders

1. Eight orders for 60 SureStarts per order.
2. Four orders for 50 LongLifes per order.

Machine-hours

1. The 480 SureStarts required 288 machine-hours.
2. The 200 LongLifes required 160 machine hours.

Assigning Overhead to Customers – Part 4

Overhead Cost for Acme Auto Parts			
Activity Cost Pools	(a) *Activity Rate*	(b) *Activity*	(a) × (b) *ABC Cost*
Customer orders	$ 452,00	12	$ 5.424
Product Design	760,00	4	3.040
Order size	6,50	448	2.912
Customer relations	1.540,00	1	1.540
Total			$ 12.916

8+4 orders

4 LongLifes orders

288 + 160 machine hours

Learning Objective 5

Use activity-based costing to compute product and customer margins.

Prepare Management Reports – Part 1

Product Margin Calculations

The first step in computing product margins is to gather each product's sales and direct cost data.

	SureStarts	LongLifes	Total
Sales	$ 31,300,000	$ 18,700,000	$ 50,000,000
Direct costs			
Direct material	9,000,000	6,000,000	15,000,000
Direct labor	7,000,000	5,000,000	12,000,000
Shipping	2,000,000	1,000,000	3,000,000

Prepare Management Reports – Part 2

Product Margin Calculations

The second step in computing product margins is to incorporate the previously computed **activity-based cost assignments** pertaining to each product.

	SureStarts	LongLifes	Total
Sales	$ 31.300.000	$ 18.700.000	$ 50.000.000
Direct costs			
Direct material	9.000.000	6.000.000	15.000.000
Direct labor	7.000.000	5.000.000	12.000.000
Shipping	2.000.000	1.000.000	3.000.000
ABC cost assignments			
Customer orders	1.808.000	2.712.000	4.520.000
Product Design		3.040.000	3.040.000
Order size	3.120.000	2.080.000	5.200.000

Prepare Management Reports – Part 3

Product Margin Calculations

The third step in computing product margins is to deduct each product's direct and indirect costs from sales.

	SureStarts		LongLifes	
Sales		$ 31.300.000		$ 18.700.000
Costs				
Direct material	$ 9.000.000		$ 6.000.000	
Direct labor	7.000.000		5.000.000	
Shipping	2.000.000		1.000.000	
Customer orders	1.808.000		2.712.000	
Product Design			3.040.000	
Order size	3.120.000		2.080.000	
Total cost		22.928.000		19.832.000
Product margin		$ 8.372.000		$ (1.132.000)

Product Margins Computed Using the Traditional Cost System – Part 4

The fourth step is to actually compute the product margins.

	SureStarts		LongLifes		Total	
Sales		$ 31,300,000		$ 18,700,000		$ 50,000,000
Cost of goods sold						
Direct materials	$ 9,000,000		$ 6,000,000		$ 15,000,000	
Direct labor	7,000,000		5,000,000		12,000,000	
Manufacturing overhead	8,400,000	24,400,000	5,600,000	16,600,000	14,000,000	41,000,000
Product margin		$ 6,900,000		2,100,000		9,000,000
Selling and administrative						11,000,000
Net operating loss						$ (2,000,000)

Shipping expense	$ 3,000,000
Marketing expense	2,000,000
General administrative expense	6,000,000
	$ 11,000,000

Differences Between ABC and Traditional Product Costs – Part 1

	SureStarts	LongLifes
Product margins – traditional	$ 6,900,000	$ 2,100,000
Product margins – ABC	8,372,000	(1,132,000)
Change in reported margins	$ 1,472,000	$ (3,232,000)

The traditional cost system overcosts the SureStarts and reports a lower product margin for this product.

The traditional cost system undercosts the LongLifes and reports a higher product margin for this product.

Differences Between ABC and Traditional Product Costs – Part 2

There are three reasons why the reported product margins for the two costing systems differ from one another.

Traditional costing allocates all manufacturing overhead to products.

ABC costing only assigns manufacturing overhead costs consumed by products to those products.

Differences Between ABC and Traditional Product Costs – Part 3

There are three reasons why the reported product margins for the two costing systems differ from one another.

Traditional costing allocates all manufacturing overhead costs using a volume-related allocation base.

ABC costing also uses non-volume related allocation bases.

Differences Between ABC and Traditional Product Costs – Part 4

There are three reasons why the reported product margins for the two costing systems differ from one another.

Traditional costing disregards selling and administrative expenses because they are assumed to be period expenses.

ABC costing directly traces shipping costs to products
And includes nonmanufacturing overhead costs caused by products in the activity cost pools that are assigned to products.

Prepare Management Reports – Part 5

Customer Margin Calculation

The first step in computing Acme Auto Parts' customer margin is to gather its sales and direct cost data.

	Acme Auto Parts
Sales	$ 29,200
Direct costs	
Direct material	7,500
Direct labor	6,700
Shipping	1,700

Prepare Management Reports – Part 6

Customer Margin Calculation

The second step is to incorporate Acme Auto Parts' previously computed **activity-based cost** assignments.

	Acme Auto Parts
Sales	$ 29,200
Direct costs	
Direct material	7,500
Direct labor	6,700
Shipping	1,700
ABC cost assignments	
Customer orders	5,424
Product design	3,040
Order size	2,912
Customer relations	1,540

Prepare Management Reports – Part 7

Customer Margin Calculation

The third step is to compute Acme Auto Parts' customer margin of $384 by deducting all its direct and indirect costs from its sales.

	Acme Auto Parts	
Sales		$ 29,200
Direct costs		
Direct material	$ 7,500	
Direct labor	6,700	
Shipping	1,700	
Customer orders	5,424	
Product design	3,040	
Order size	2,912	
Customer relations	1,540	28,816
Customer margin		$ 384

Targeting Process Improvement

Activity-based management is used in conjunction with ABC to identify areas that would benefit from process improvements by focusing on activities to eliminate waste, decrease processing time, and reduce defects.

ABC activity rates can also provide valuable clues concerning where there is waste and the opportunity for improvement.

Benchmarking can be used to compare activity cost information with standards of performance achieved by other organizations.

Characteristics of a Successful ABC Implementation

Strong top management support.
Without leadership from top management, some managers may not be motivated to embrace the need to change.

Linked to how people are evaluated and rewarded.
If employees continue to be evaluated and rewarded using traditional (non-ABC) cost data, they will quickly get the message that ABC is not important and they will abandon it.

Cross-functional teams should be created.
Cross-functional employees possess intimate knowledge of operations that is necessary for designing an effective ABC system.