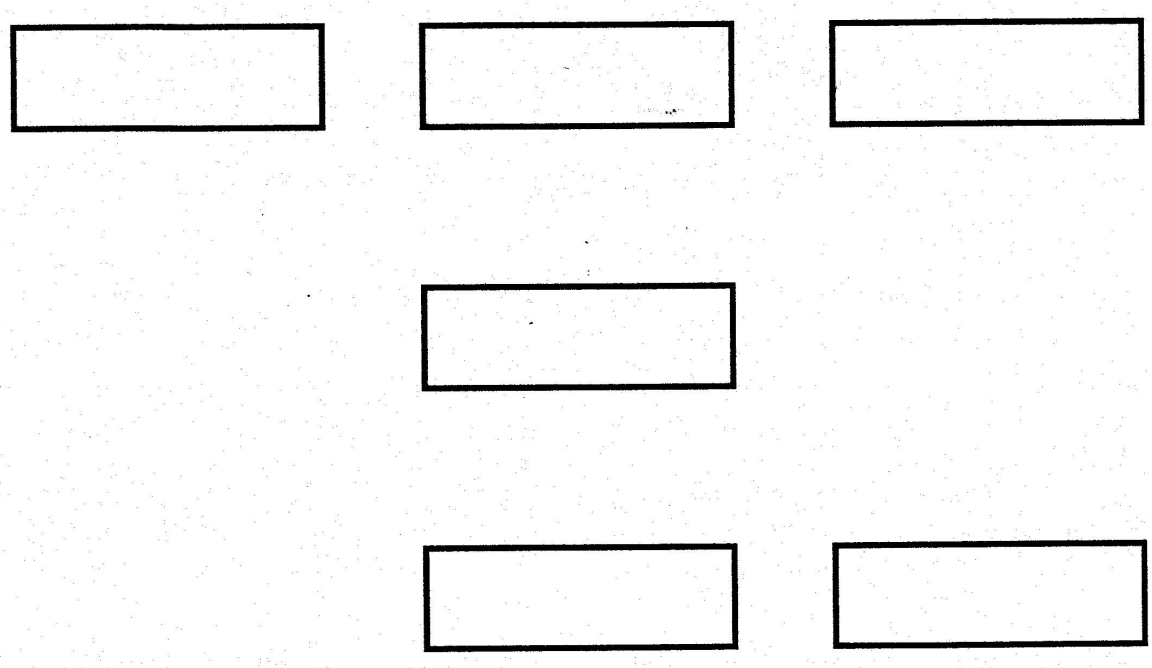
COST FLOWS IN A MANUFACTURING FIRM



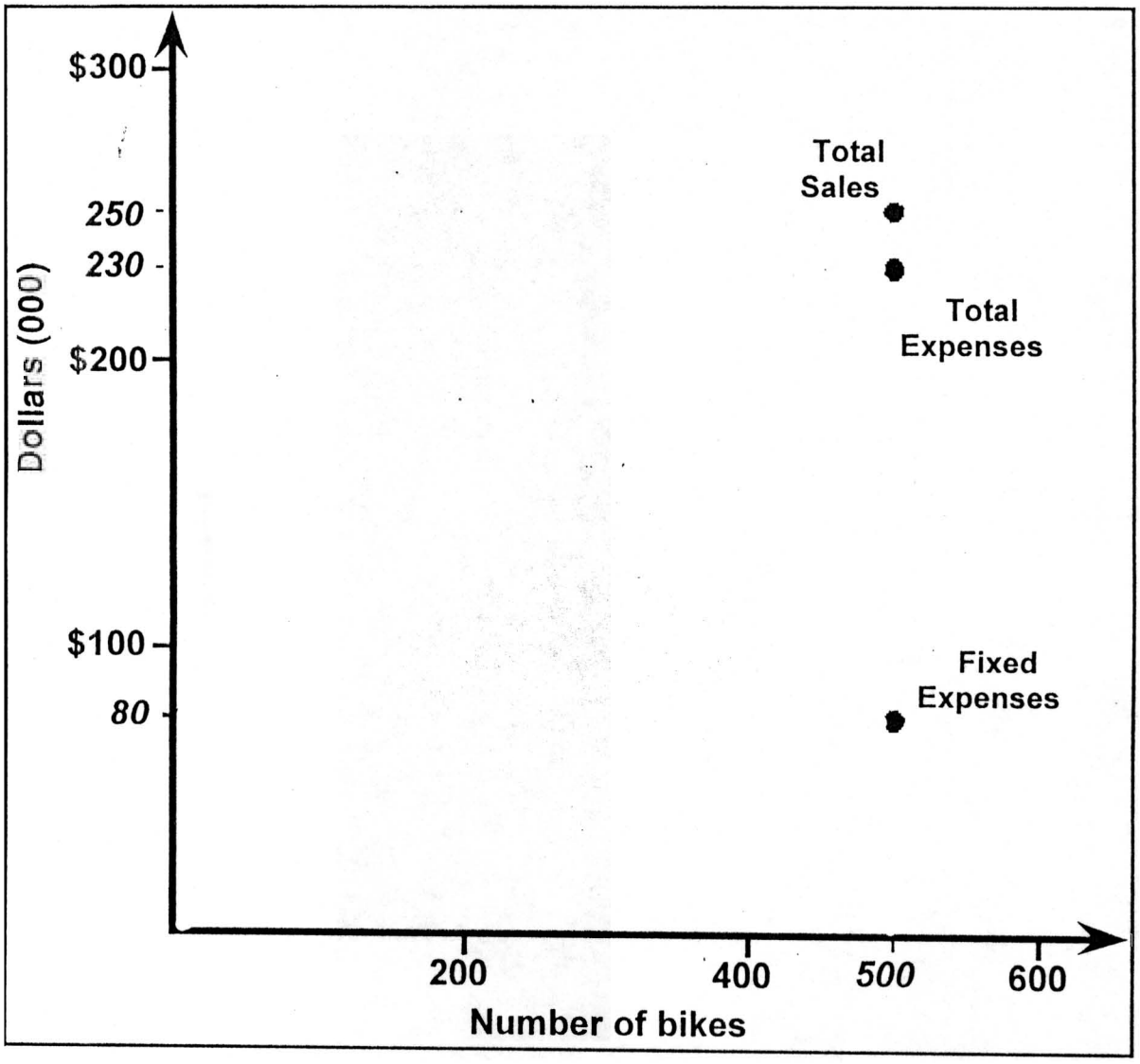
COST-VOLUME-PROFIT ANALYSIS

%	I/S	_____ Bike	_____ Bikes	_____ Bikes
	Sales			
	Variable Costs			
	Contribution Margin			
	Fixed Costs			
	Net Income			

%	I/S	_____ Bikes	_____ Bikes	_____ Bikes
	Sales			
	Variable Costs			
	Contribution Margin			
	Fixed Costs			
	Net Income			

2.

PREPARING A CVP GRAPH



BREEZY BOAT COMPANY

Cost accounting concerns the procedure for recording, organizing, analyzing, and reporting costs. Consider the operation of the Breezy Boat Company as described below and decide what cost information would be useful to the managers of the company and how they should go about getting it.

The Breezy Boat Company is beginning to manufacture two models of boats, nine- and twelve-foot sail boats, and is planning to sell the boats through dealers in the South and Mid-Atlantic states. The manufacturing process consists of designing and contracting for the manufacture of a mold for each size, applying fiberglass to the mold, curing and finishing the hull, and mounting the purchased hardware. Boats can be produced at the rate of about eight a day on each mold (one shift) and a mold will make 2,000 - 4,000 boats before it wears out.

There are two manufacturing departments, each with a foreman. One is the molding department, which carries the boats through the finishing work in the hull; the other is the assembly department, which installs the hardware and packs the mast, sail, and fittings ready for shipment.

When the plant is running one shift, there are six people working in the molding department and four in the assembly department; one person runs the warehouse with attached receiving and shipping operations, and there are two people in the clean-up crew. The office staff consists of one engineer who works on product design and production methods, the president, the sales manager, a production manager, and four people handling clerical duties including billing, payroll, and payables.

Monthly factory payroll with the full complement enumerated is about $30,000 a month; other payroll comes to around $12,000 a month. Material, purchased parts, and amortized mold costs for 320 boats—one shift production for one month—is about $53,000. Overhead per month when operating at the one shift level is estimated to be $17,000, excluding payroll. Sales revenue from 320 boats would be around $115,000.

Using your imagination to picture the operations of the Breezy Boat Company, make your list of the decisions or activities for which you would want to have cost information. Then try to outline a method by which this cost information could be obtained, disregarding for the moment the cost of operating your information gathering system.

BREEZY BOAT COMPANY

1. (20 minutes) Make a list of decisions or activities of Breezy Boat's management that would be aided by some sort of accounting information input.

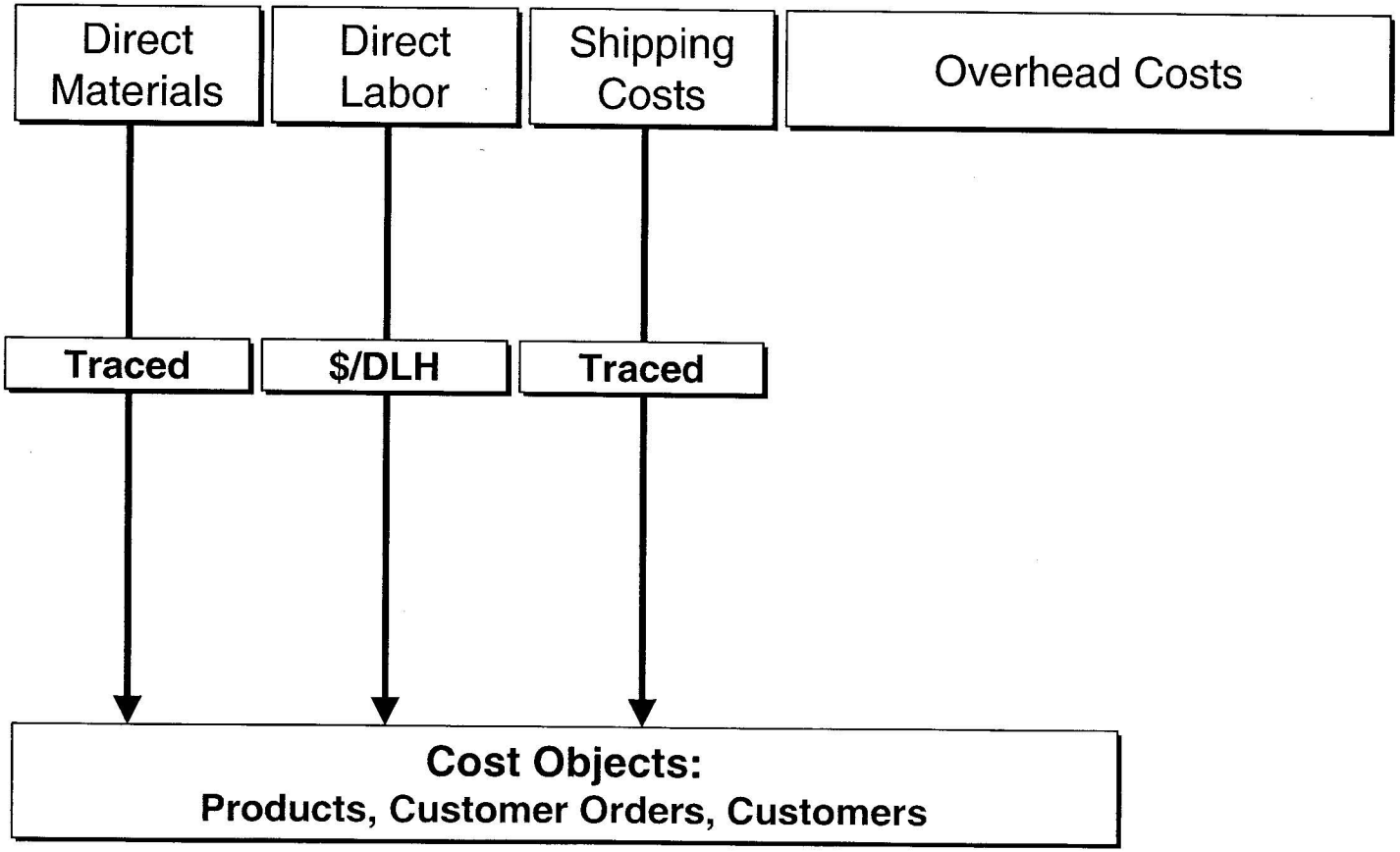
2. (30 minutes) Determine what costs would be helpful in making these decisions. See table below:

	320 Boats per month	3,840 Boats per Year	Average per Boat
Sales	$ 115,000	$1,380,000	$359.38
Costs:			
Factory Payroll	$ 30,000	$ 360,000	$ 93.75
Other Payroll	$ 12,000	$ 144,000	$ 37.50
Material/part/molds	$ 53,000	$ 636,000	$165.63
Overhead	$ 17,000	$ 204,000	$ 53.13
Total Costs	$ 112,000	$1,344,000	$350.00
Profit Before Tax	$ 3,000	$ 36,000	$ 9.38

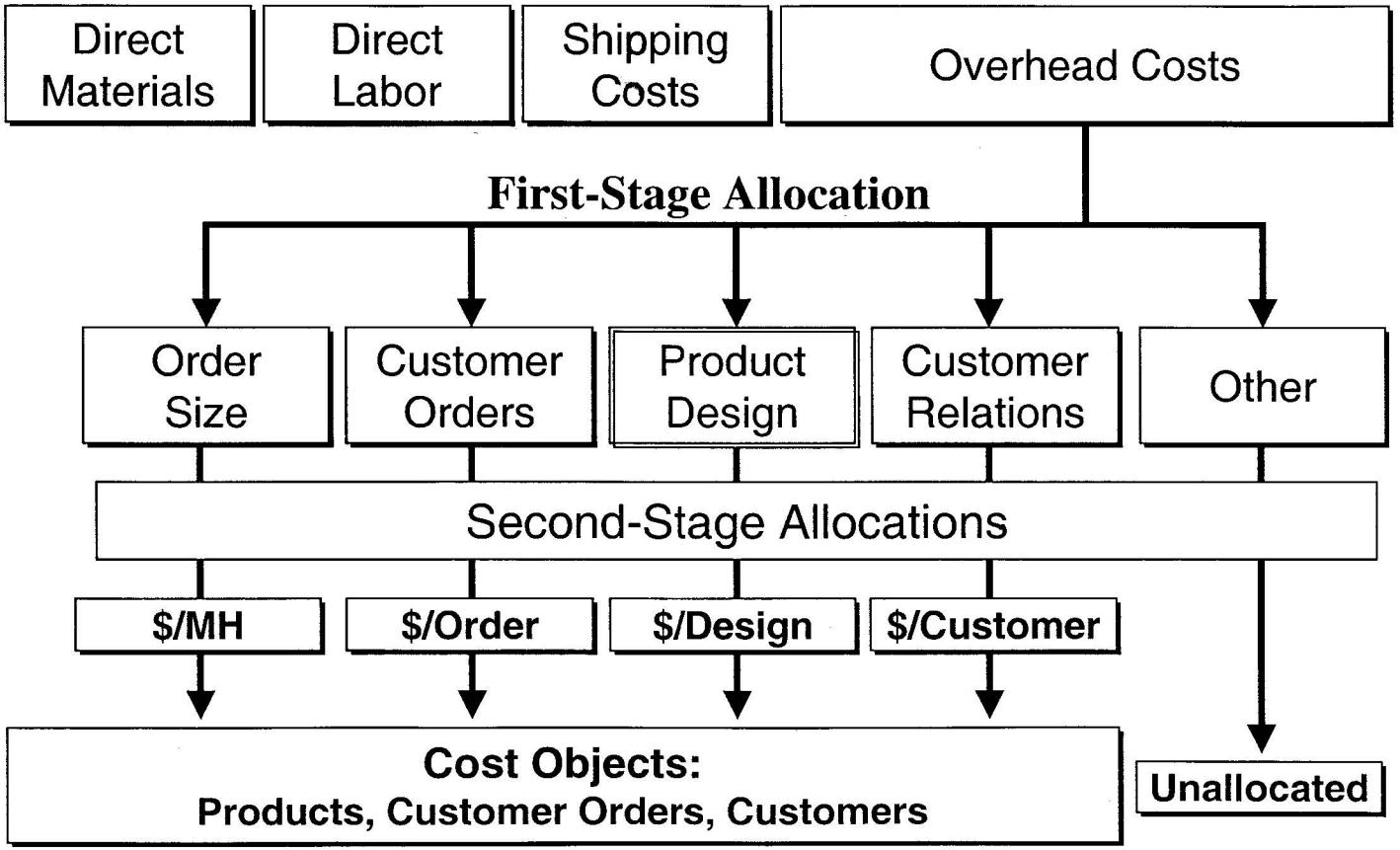
3. (30 minutes) Outline a method by which this cost information could be obtained. Try to visualize the accounting system and how it might collect costs and assign them to Breezy Boat's products.

Overhead Costs at Classic Brass (Manufacturing and NonManufacturing)			
Production Department			
Indirect factory wages	$ 500,000		
Factory equipment depreciation	300,000		
Factory utilities	120,000		
Factory building lease	80,000	$	1,000,000
Shipping costs traced to customer orders			40,000
General Administrative Department			
Administrative wages and salaries	400,000		
Office equipment depreciation	50,000		
Administrative building lease	60,000		510,000
Marketing Department			
Marketing wages and salaries	250,000		
Selling expenses	50,000		300,000
Total overhead costs		$	1,850,000

Activity-Based Costing at Classic Brass



Activity-Based Costing at Classic Brass



8

ACTIVITY-BASED COSTING

An activity is any event or transaction that is a cost driver. Examples of activities that are cost drivers include:

- Machine setups.
- Purchase orders.
- Quality inspections.
- Production orders.
- Blood tests run.
- Maintenance requests.
- Machine time.
- Power consumed.
- Beds occupied.
- Flight-hours logged.

Activity-based costing improves costing systems in three ways:

1. *It increases the number of cost pools used to accumulate overhead costs.* Rather than accumulate all overhead costs in a single, company-wide pool (or in departments), costs are accumulated by activity.

2. *It changes the bases used to assign overhead cost to products.* Rather than assigning costs on the basis of a measure of volume (such as direct labor-hours or machine-hours), costs are assigned on the basis of the activities that generate the costs.

3. *It changes the nature of many overhead costs.* Costs that were formerly indirect (depreciation, power, inspection) are traced to specific activities.

10

ACTIVITY-BASED COSTING EXAMPLE

Sarver Company manufactures 4,000 units of Product A and 20,000 units of Product B each year. The company currently has a traditional cost system in which direct labor-hours is used to assign overhead cost to products. The predetermined overhead rate is:

$$\frac{\text{Manufacturing overhead cost}}{\text{Direct labor-hours}} = \frac{\qquad}{\qquad} =$$

Product A requires 2.5 DLH and Product B requires 2.0 DLH. According to the current cost system, the unit product costs are:

	Product A	*Product B*
Direct materials	$36.00	$30.00
Direct labor	17.50	14.00
Manufacturing overhead		
.....		
Unit product cost.....		

Suppose, however, that overhead costs are actually caused by the five activities listed below rather than by direct labor hours.

Activity Center	*Estimated Overhead Cost*
Machine setups	
Quality inspections	
Production orders	
Machine-hours worked	
Material receipts	
Total	

Also suppose the following activity data have been estimated:

Activity Center	Expected Activity		
	Total	Product A	Product B
Machine setups			
Quality inspections			
Production orders			
Machine-hours worked			
Material receipts			

These data can be used to develop overhead rates for each of the five activities:

Activity Center	Estimated Overhead Costs	Expected Activity	Overhead Rate
Machine setups			
Quality inspections			
Production orders			
Machine-hours worked			
Material receipts			

13

Product A

Activity Center	*Overhead Rate*	*Activity*	*Amount*
Machine setups.....			
Quality inspections.....			
Production orders.....			
Machine-hours worked.....			
Material receipts			
Total overhead (a).....			
Number of units (b).....			
Overhead per unit (a) ÷ (b)...			

Product B

Activity Center	*Overhead Rate*	*Activity*	*Amount*
Machine setups.....			
Quality inspections.....			
Production orders.....			
Machine-hours worked.....			
Material receipts			
Total overhead (a).....			
Number of units (b).....			
Overhead per unit (a) ÷ (b)...			

ACTIVITY-BASED COSTING EXAMPLE (cont'd)

Product costs computed using the two different methods can now be contrasted:

Product costs using activity-based costing:

	Product A	*Product B*
Direct materials		
Direct labor		
Manufacturing overhead		
Unit product cost		

Product costs using the old costing system:

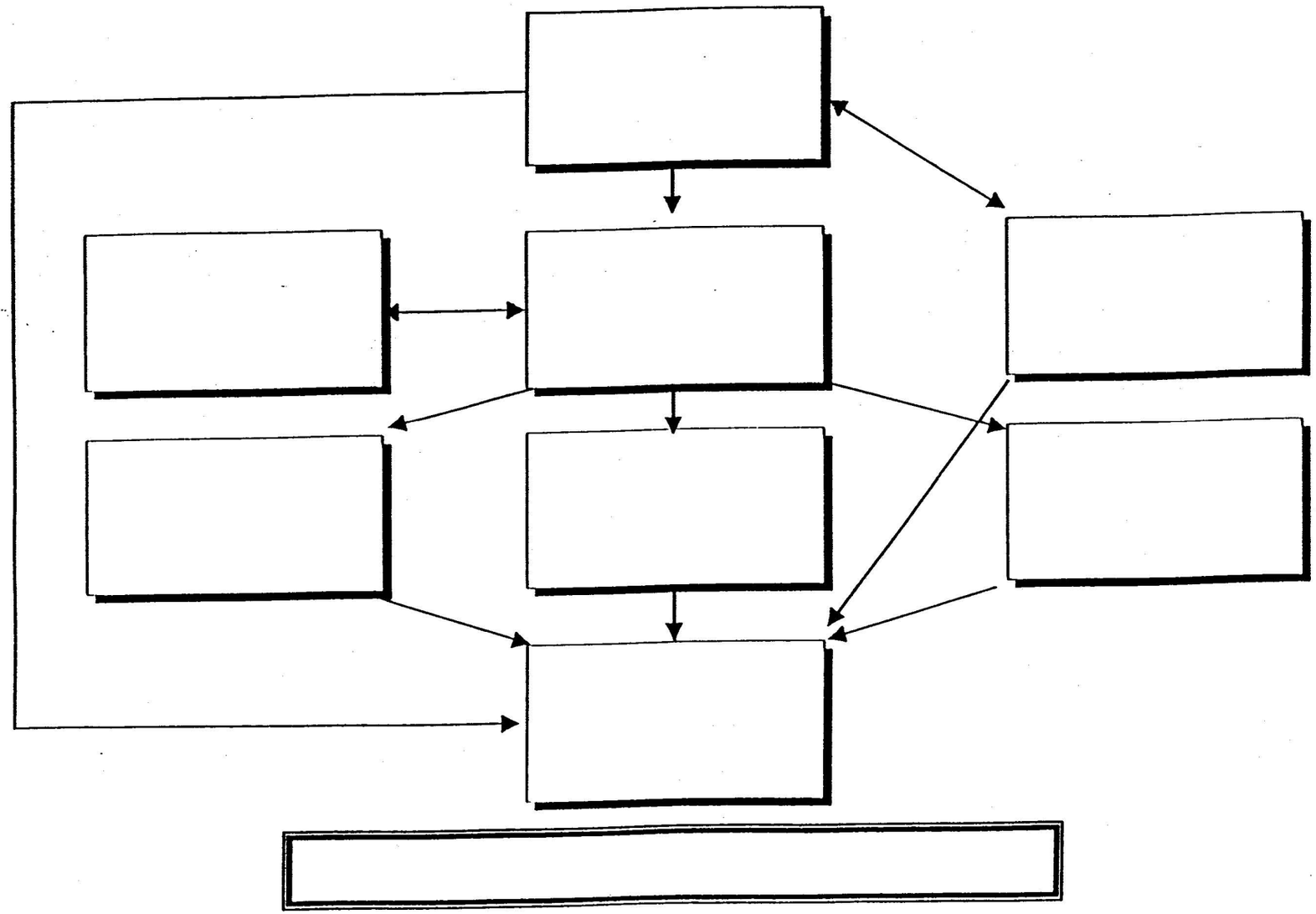
	Product A	*Product B*
Direct materials		
Direct labor		
Manufacturing overhead		
Unit product cost		

15

- Adopting activity-based costing usually results in shifting overhead costs from high volume to low volume products.
  - The per unit costs of the low volume products increase and the per unit costs of the high volume products decrease.
  - The effects are not symmetrical—there is a bigger dollar effect on the per unit costs of the low volume products.

16

The Master Budget



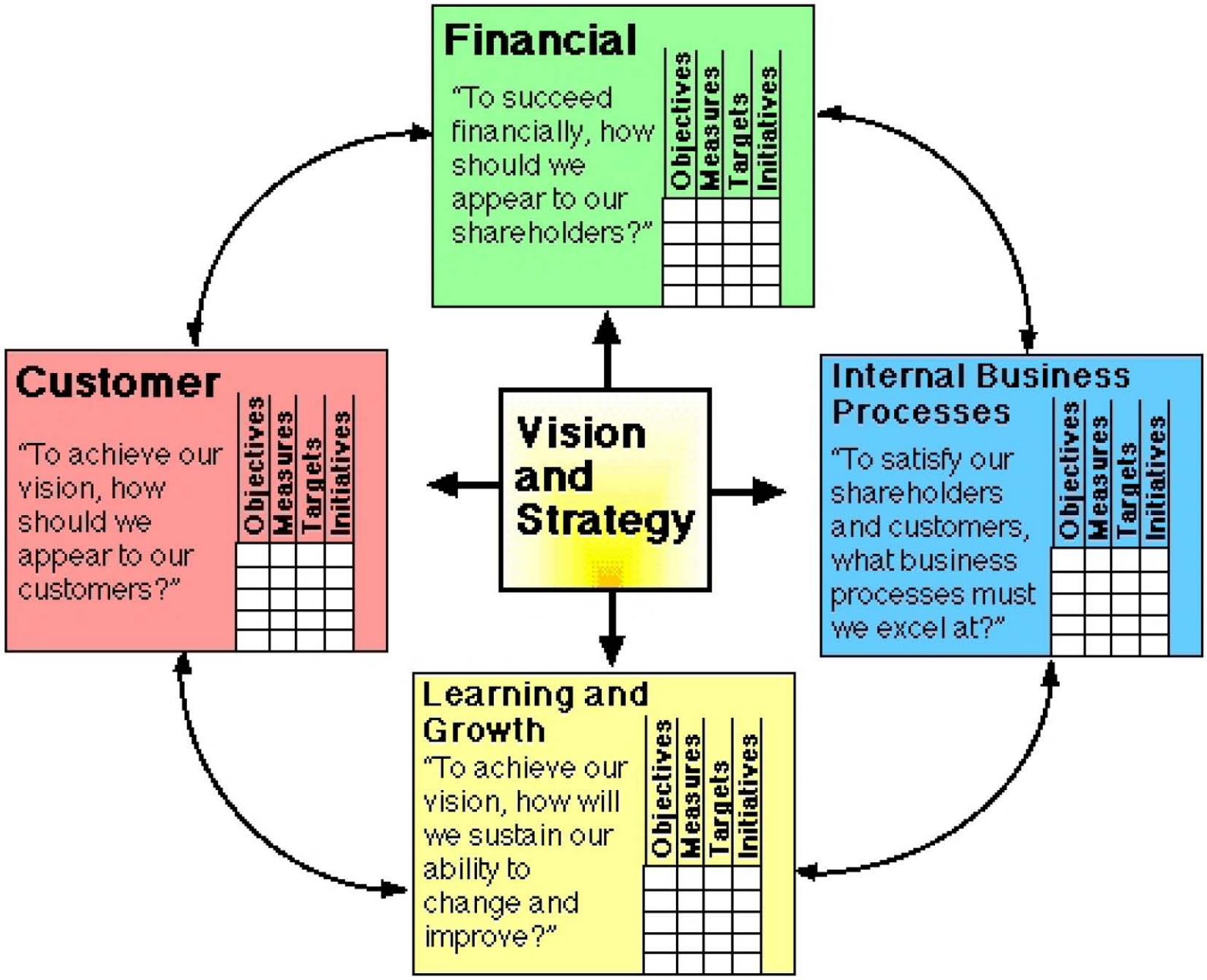
OVERVIEW OF BUDGETING

A budget is a detailed plan for acquiring and using financial and other resources over a specified period. Budgeting involves two stages:

- Planning: developing objectives and preparing various detailed budgets to achieve those objectives.
- Control: the steps taken by management to attain the objectives set down at the planning stage.

PURPOSES OF BUDGETING

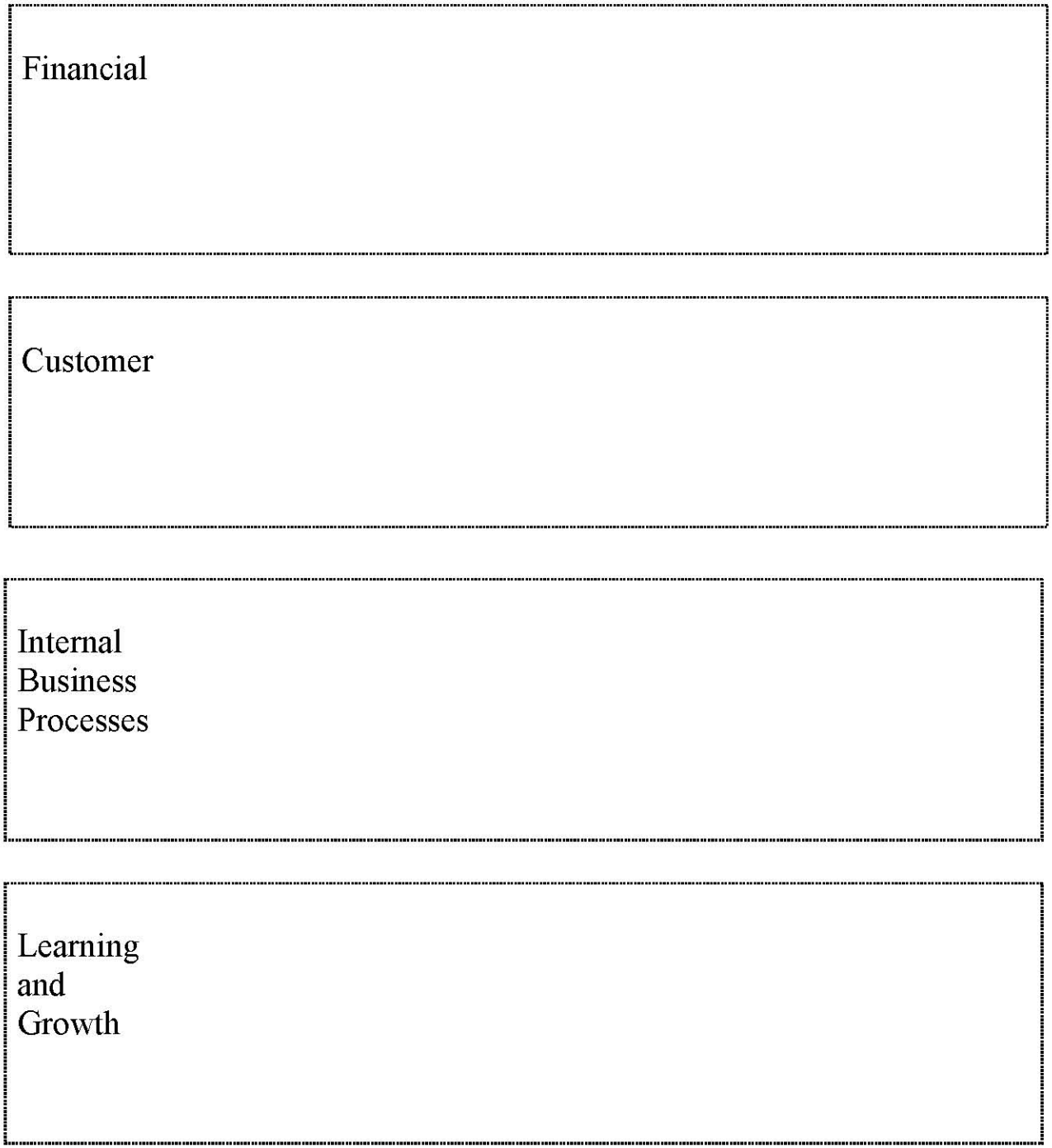
- Budgets communicate management's plans throughout the organization.
- Budgeting forces managers to give planning top priority.
- Budgets provide a means of allocating resources to their most effective uses.
- Budgeting uncovers potential bottlenecks.
- Budgeting coordinates the activities of the entire organization.
- Budgeting provides goals that serve as benchmarks for evaluating subsequent performance.

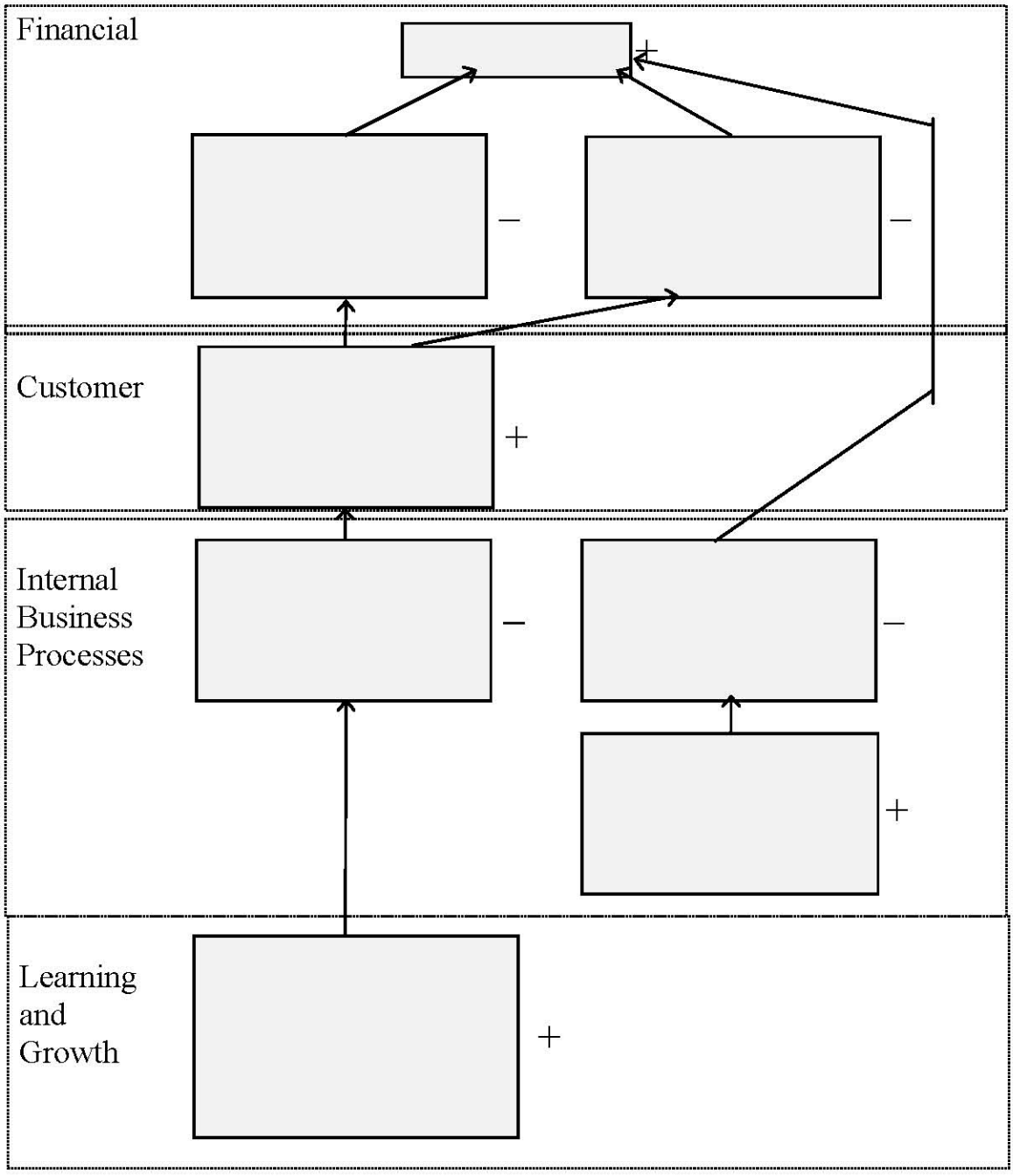

Financial
"To succeed financially, how should we appear to our shareholders?"
Objectives
Measures
Targets
Initiatives
Customer
"To achieve our vision, how should we appear to our customers?"
Objectives
Measures
Targets
Initiatives
Vision and Strategy
Internal Business Processes
"To satisfy our shareholders and customers, what business processes must we excel at?"
Objectives
Measures
Targets
Initiatives
Learning and Growth
"To achieve our vision, how will we sustain our ability to change and improve?"
Objectives
Measures
Targets
Initiatives

What does the BSC balance?

1. Short-term objectives	~	Long-term objectives
2. External measures (for shareholders and customers)	~	Internal measures of critical business processes, innovation, and learning & growth)
3. Outcomes desired	~	Performance drivers of those outcomes
4. Hard objective measures	~	Softer, more-subjective measures

Kaplan and Atkinson, Advanced Management Accounting, 3rd edition, pp. 375-376.


Financial
Customer
Internal
Business
Processes
Learning
and
Growth


Financial
+
–
–
Customer
+
Internal
Business
Processes
–
–
+
Learning
and
Growth
+

CONSTRUCTING A BALANCED SCORECARD

Weierman Department Store is located in the downtown area of a medium-sized city in the American Midwest. While the store had been profitable for many years, it is facing increasing competition from large national chains that have set up stores in the city's suburbs. Recently the downtown area has been undergoing revitalization, and the owners of Weierman Department Store are somewhat optimistic that profitability can be restored.

In an attempt to accelerate the return to profitability, the management of Weierman Department Store is in the process of designing a balanced scorecard for the company. Management believes the company should focus on two key problems. First, customers are taking longer and longer to pay the bills they incur on the department store's charge card and they have far more bad debts than are normal for the industry. If this problem were solved, the company would have far more cash to make much needed renovations. Investigation has revealed that much of the problem with late payments and unpaid bills is apparently due to disputed bills that are the result of incorrect charges on the customer bills. These incorrect charges usually occur because salesclerks enter data incorrectly on the charge account slip. Second, the company has been incurring large losses on unsold seasonal apparel. Such items are ordinarily resold at a loss to discount stores that specialize in such distress items.

The meeting in which the balanced scorecard approach was discussed was disorganized and ineffectively led—possibly because no one other than one of the vice presidents had read anything about how to put a balanced scorecard together. Nevertheless, a number of potential performance measures were suggested by various managers. These potential performance measures are listed below:

Performance measures suggested by various managers:

- Total sales revenue.
- Percentage of salesclerks trained to correctly enter data on charge account slips.
- Customer satisfaction with accuracy of charge account bills from monthly customer survey.
- Sales per employee.
- Travel expenses for buyers for trips to fashion shows.
- Average age of accounts receivables.
- Courtesy shown by junior staff members to senior staff members based on surveys of senior staff.
- Unsold inventory at the end of the season as a percentage of total cost sales.
- Sales per square foot of floor space.
- Percentage of suppliers making just-in-time deliveries.
- Quality of food in the staff cafeteria based on staff surveys.
- Written-off accounts receivables (bad debts) as a percentage of sales.
- Percentage of charge account bills containing errors.
- Percentage of employees who have attended the city's cultural diversity workshop.
- Total profit.
- Profit per employee.

23

Required:

1. As someone with more knowledge of the balanced scorecard than almost anyone else in the company, you have been asked to build an integrated balanced scorecard. In your scorecard, use only performance measures suggested by the managers above. You do not have to use all of the performance measures suggested by the managers, but you should build a balanced scorecard that reveals a strategy for dealing with the problems with accounts receivable and with unsold merchandise. Do not be particularly concerned with whether a specific performance measure falls within the learning and growth, internal business process, customer, or financial perspective. However, clearly show the causal links between the performance measures with arrows and whether the performance measures should show increases or decreases.
2. Assume that the company adopts your balanced scorecard. After operating for a year, there are improvements in some performance measures but not in others. What should management do next?
3. a. Suppose that customers express greater satisfaction with the accuracy of their charge account bills but the performance measures for the average age of receivables and for bad debts do not improve. Explain why this might happen.
   b. Suppose that the performance measures for the average age of accounts receivable, bad debts, and unsold inventory improve, but total profits do not. Explain why this might happen. Assume in your answer that the explanation lies within the company.

EXERCISE 9–5 Creating a Balanced Scorecard

Mason Paper Company (MPC) manufactures commodity grade papers for use in computer printers and photocopiers. MPC has reported net operating losses for the last two years due to intense price pressure from much larger competitors. The MPC management team—including Kristen Townsend (CEO), Mike Martinez (vice president of Manufacturing), Tom Andrews (vice president of Marketing), and Wendy Chen (CFO)—is contemplating a change in strategy to save the company from impending bankruptcy. Excerpts from a recent management team meeting are shown below:

Townsend: As we all know, the commodity paper manufacturing business is all about economies of scale. The largest competitors with the lowest cost per unit win. The limited capacity of our older machines prohibits us from competing in the high-volume commodity paper grades. Furthermore, expanding our capacity by acquiring a new paper-making machine is out of the question given the extraordinarily high price tag. Therefore, I propose that we abandon cost reduction as a strategic goal and instead pursue manufacturing flexibility as the key to our future success.

Chen: Manufacturing flexibility? What does that mean?

Martinez: It means we have to abandon our "crank out as many tons of paper as possible" mentality. Instead, we need to pursue the low-volume business opportunities that exist in the nonstandard, specialized paper grades. To succeed in this regard, we'll need to improve our flexibility in three ways. First, we must improve our ability to switch between paper grades. Right now, we require an average of four hours to change over to another paper grade. Timely customer deliveries are a function of changeover performance. Second, we need to expand the range of paper grades that we can manufacture. Currently, we can only manufacture three paper grades. Our customers must perceive that we are a "onestop shop" that can meet all of their paper grade needs. Third, we will need to improve our yields (e.g., tons of acceptable output relative to total tons processed) in the nonstandard paper grades. Our percentage of waste within these grades will be unacceptably high unless we do something to improve our processes. Our variable costs will go through the roof if we cannot increase our yields!

Chen: Wait just a minute! These changes are going to destroy our equipment utilization numbers!

Andrews: You're right Wendy; however, equipment utilization is not the name of the game when it comes to competing in terms of flexibility. Our customers don't care about our equipment utilization. Instead, as Mike just alluded to, they want just-in-time delivery of smaller quantities of a full range of paper grades. If we can shrink the elapsed time from order placement to order delivery and expand our product offerings, it will increase sales from current customers and bring in new customers. Furthermore, we will be able to charge a premium price because of the limited competition within this niche from our cost-focused larger competitors. Our contribution margin per ton should drastically improve!

Martinez: Of course, executing the change in strategy will not be easy. We'll need to make a substantial investment in training because ultimately it is our people who create our flexible manufacturing capabilities.

Chen: If we adopt this new strategy, it is definitely going to impact how we measure performance. We'll need to create measures that motivate our employees to make decisions that support our flexibility goals.

Townsend: Wendy, you hit the nail right on the head. For our next meeting, could you pull together some potential measures that support our new strategy?

Required:

1. Contrast MPC's previous manufacturing strategy with its new manufacturing strategy.
2. Generally speaking, why would a company that changes its strategic goals need to change its performance measurement system as well? What are some examples of measures that would have been appropriate for MPC prior to its change in strategy? Why would those measures fail to support MPC's new strategy?
3. Using Exhibit 9-12 as a guide, construct a balanced scorecard that would support MPC's new manufacturing strategy. Use arrows to show the causal links between the performance measures and show whether the performance measure should increase or decrease over time. Feel free to create measures that may not be specifically mentioned in the chapter, but nonetheless make sense given the strategic goals of the company.
4. What hypotheses are built into MPC's balanced scorecard? Which of these hypotheses do you believe are most questionable and why?

STATIC BUDGETS

EXAMPLE: Larch Company, which makes a single product, bases its budgets for manufacturing overhead on the following data:

Variable overhead cost category	*Standard cost per unit*
Maintenance	
Indirect materials	
Utilities	
Total variable cost	

Fixed overhead cost category	*Budgeted annual cost*
Depreciation	
Supervision	
Insurance	
Total fixed cost	

STATIC BUDGETS (cont'd)

Larch Company originally to produce and sell during the year, but activity was only A report based upon the static (i.e., original) budget from the beginning of the year follows:

LARCH COMPANY
Comparison of Actual Overhead Costs
to Budgeted Overhead Costs

	Actual	*Original Budget*	*Variance*
Units produced and sold			
Variable overhead costs:			
Maintenance			
Indirect materials			
Utilities			
Total variable costs			
Fixed overhead costs:			
Depreciation			
Supervision			
Insurance			
Total fixed overhead			
Total overhead costs			

FLEXIBLE BUDGETS

- A flexible budget is geared toward all levels of activity within a range, rather than toward only one level of activity.
- A flexible budget is dynamic rather than static; it can be tailored for any level of activity within the relevant range.

EXAMPLE: Refer to the data for Larch Company. A flexible budget for manufacturing overhead is provided below for three different levels of activity ranging from 5,000 to 15,000 units.

LARCH COMPANY
Flexible Budget for Overhead

	Cost Formula per unit	*Units* 5,000	10,000	15,000
Variable overhead costs:				
Maintenance				
Indirect materials				
Utilities				
Total variable costs ...				
Fixed overhead costs:				
Depreciation				
Supervision				
Insurance				
Total fixed overhead ..				
Total overhead costs				

EQUIPMENT REPLACEMENT DECISION

EXAMPLE: White Company is considering replacing an old machine with a new, more efficient machine. Data on the machines follow:

New machine:
- List price new .....
- Annual variable expenses .....
- Expected life .....

Old machine:
- Original cost .....
- Remaining book value .....
- Disposal value now .....
- Annual variable expenses .....
- Remaining life .....

White Company's sales are _____ per year and fixed expenses (other than depreciation) are _____ per year. Should the new machine be purchased?

Incorrect solution:

Some managers would not purchase the new machine since disposal of the old machine would apparently result in a loss:

.....	
.....	_____
.....	_____

DROP OR RETAIN A SEGMENT

EXAMPLE: Due to the declining popularity of digital watches, Sweiz Company's digital watch line has not reported a profit for several years. An income statement for last year follows:

Segment Income Statement—
Digital Watches

Sales	
Less variable expenses:	
Variable manufacturing costs	
Variable shipping costs	
Commissions	
Contribution margin	
Less fixed expenses:	
General factory overhead*	
Salary of product line manager	
Depreciation of equipment**	
Product line advertising	
Rent—factory space***	
General administrative expense*	
Net loss	

* Allocated common costs that would be redistributed to other product lines if digital watches were dropped.

** This equipment has no resale value and does not wear out through use.

*** The digital watches are manufactured in their own facility.

Should the company retain or drop the digital watch line?

MAKE OR BUY DECISION

A decision concerning whether an item should be produced internally or purchased from an outside supplier is called a "make or buy" decision.

EXAMPLE: Essex Company is presently making a part that is used in one of its products. The unit product cost is:

Direct materials	$
Direct labor	
Variable manufacturing overhead	
Depreciation of special equipment*	
Supervisor's salary	
General factory overhead**	___
Total unit product cost	═══

* The special equipment has no resale value.
** Common costs allocated on the basis of direct labor hours.

The costs above are based on produced each year. An outside supplier has offered to provide the for only per part. Should this offer be accepted?

UTILIZATION OF CONSTRAINED RESOURCES

EXAMPLE: Ensign Company makes two products, X and Y. Selected data on the products follow:

	X	Y
Selling price per unit		
Less variable expenses per unit		
Contribution margin		
Contribution margin ratio		
Current demand per week (units)		
Processing time required on Machine N34 per unit		

Machine N34 is the bottleneck in the plant. There is excess capacity on all of the other machines—Machine N34 is the only machine that is being used to 100% of its capacity. Machine N34 is available for minutes per week, which is not enough capacity to satisfy demand for both product X and product Y. Should the company focus its efforts on product X or product Y?

CM PER UNIT OF THE CONSTRAINED RESOURCE

	X	Y
Contribution margin per unit (a)		
Constrained resource required to produce one unit (b)	_____	_____
Contribution margin per unit of the constrained resource (a)÷ (b)	_____	_____

UTILIZATION OF CONSTRAINED RESOURCES (cont'd)

- Product Y should be emphasized since it has the larger contribution margin per unit of the constrained resource. A minute of processing time on Machine N34 can be used to make of Product X, with a contribution margin of or of Product Y, with a combined contribution margin of

- If there are no other considerations (such as satisfying an important customer), the best plan would be to produce to meet current demand for Product Y and then use any remaining capacity to make Product X.

ALLOTTING THE CONSTRAINED RESOURCE

Total time available on Machine N34 (a)		min.
Planned production and sales of Product Y		units
Time required to process one unit	_____	min.
Total time required to make Product Y (b)	_____	min.
Time available to process Product X (a) – (b) ..		min.
Time required to process one unit	_____	min.
Planned production and sales of Product X	═══	units

RESULTS OF FOLLOWING THE ABOVE PLAN

	X	Y	Total
Planned production and sales (units)			
Contribution margin per unit	_____	_____	
Total contribution margin	═══	═══	═══

JOINT PRODUCT COSTS

- Some companies manufacture a number of end products from a single raw material input. Such products are known as joint products.
  - The split-off point is the point in the manufacturing process at which the joint products can be recognized as separate products.
  - The term joint product costs is used to describe those costs that are incurred up to the split-off point.
- It is profitable to continue processing a joint product after the split-off point if the incremental revenue from such processing exceeds the incremental processing costs.
- In practice, the joint costs incurred up to the split-off point are almost always allocated to the joint products. Extreme caution should be exercised in interpreting these allocated joint costs. They are *not* relevant in decisions concerning whether joint products should be processed further since they are incurred whether or not there is further processing.

JOINT PRODUCT COSTS (cont'd)

EXAMPLE: NW Sawmill cuts logs from which unfinished lumber and scrap (i.e., sawdust, chips, and bark) are the immediate joint products. The unfinished lumber can be sold "as is" or processed further into finished lumber. The scrap can also be sold "as is" to gardening supply wholesalers or processed further into prestologs. Data concerning these joint products appear below:

	Per Log	
	Lumber	*Scraps*
Sales value at the split-off point		
Sales value after further processing		
Allocated joint product costs		
Cost of further processing		

Analysis of Sell or Process Further

	Per Log	
	Lumber	*Scraps*
Sales value after further processing		
Sales value at the split-off point	___	___
Incremental revenue		
Cost of further processing	___	___
Profit (loss) from further processing	═══	═══

Question: If the sales value of the scraps at the split-off point drops to should they be thrown away?

THE FOUR FINANCIAL STATEMENTS

BALANCE SHEET
As of December 31, 20x1

	(000)
Assets	
Cash	$ 100
Other Current Assets	$ 1,300
Long-term Investments	$ 3,000
Long-term Assets	$ 10,000
Intangible Assets	$ 1,600
Total Assets	$ 16,000
Liabilities and Owner's Equity	
Current Liabilities	$ 1,000
Long-term Liabilities	$ 4,950
Joe Owner, Capital	$ 10,050
Total Liabilities and Equity	$ 16,000

Statement of Cash Flows
For the year ended December 31, 20x2

	(000)
Net cash flows from operating activities	$ 1,470
Net cash used by investing activities	$ (4,100)
Net cash provided by financing activities	$ 2,750
Increase in cash balance	$ 120
Beginning cash balance (12/31/x1)	$ 100
Ending cash balance (12/31/x2)	$ 220

Income Statement
For the year ended December 31, 20x2

	(000)
Revenues	$ 5,880
Expenses	$ 4,795
Net Income	$ 1,080

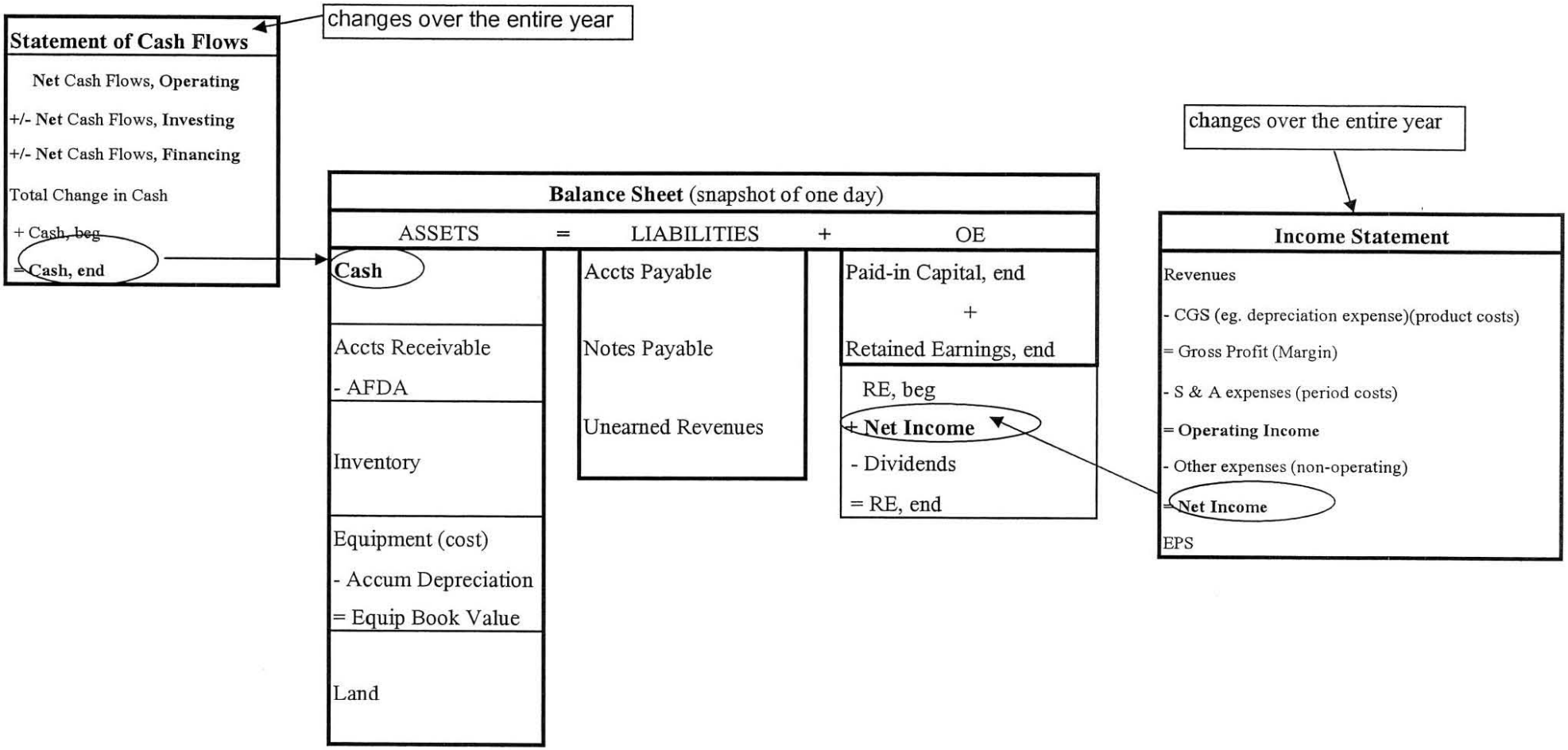
Statement of Changes in Owner's Equity
For the year ended December 31, 20x2

	(000)
Joe Owner, capital, 1/1/x2	$ 10,050
Plus: Investments by owner	$ -
Plus: Net Income	$ 1,085
Less: Withdrawals by owner	$ 200
Joe Owner, capital, 12/31/x2	$ 10,935

BALANCE SHEET
As of December 31, 20x2

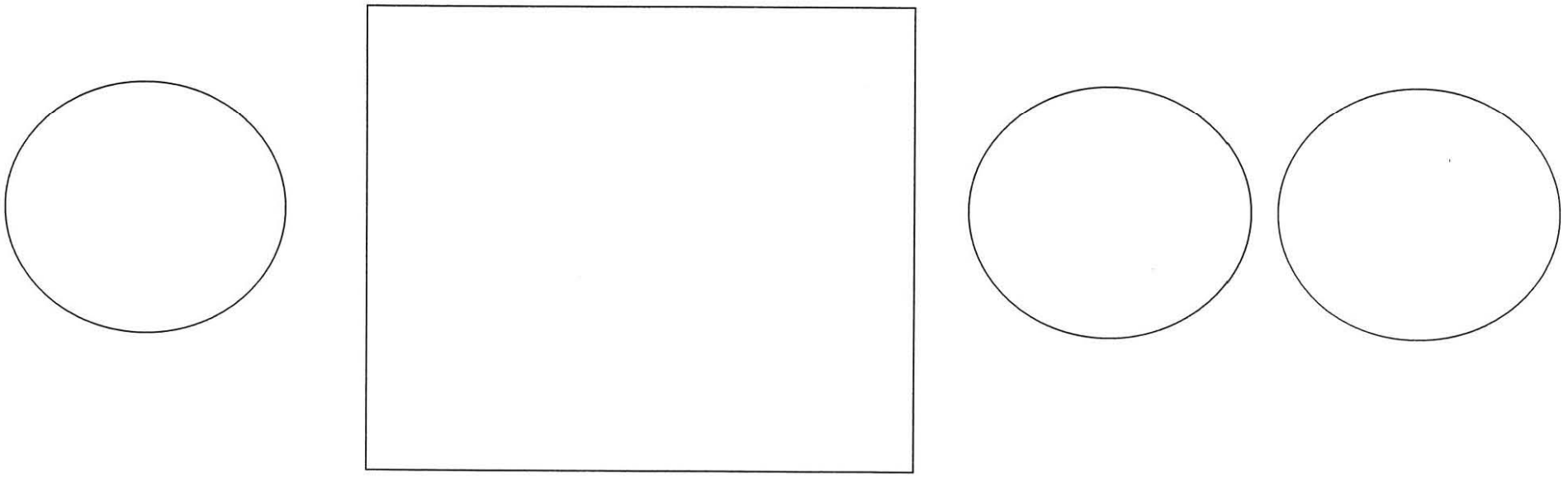
	(000)
Assets	
Cash	$ 220
Other Current Assets	$ 1,195
Long-term Investments	$ 4,000
Long-term Assets	$ 11,500
Intangible Assets	$ 1,700
Total Assets	$ 18,615
Liabilities and Owner's Equity	
Current Liabilities	$ 740
Long-term Liabilities	$ 6,940
Joe Owner, Capital	$ 10,935
Total Liabilities and Equity	$ 18,615

RELATIONSHIPS BETWEEN THE FINANCIAL STATEMENTS



ACCOUNTING PRINCIPLES

	PRINCIPLE	DEFINITION	EXAMPLE
1	BUSINESS ENTITY	Business accounted for separately from owners	One person has separate accounting records for Corp A, Corp B, and personal.
2	OBJECTIVITY	Acct info must be definite (dollars), verifiable (documented), and free from bias (audited).	Cost of building was $3M, verified by contract, and deemed correct by independent CPA.
3	HISTORICAL COST (a.k.a. "Cost Principle")	Exchange price used to value assets and liabilities.	Land bought for $1M appreciates to $1.4 million. Reported on BS at $1M.
4	GOING-CONCERN	Belief that business will continue indefinitely unless evidence to the contrary.	Use historical cost to value assets since company will exist until asset's sale, at which time new value will be determined.
5	REVENUE RECOGNITION	Revenue recorded when earned.	A buys goods on account from B on May 1, then pays cash on June 1. Revenue recorded on May 1, even though cash not yet received.
6	TIME PERIOD	Firm's life can be divided up into discrete time periods.	Financial statements prepared on monthly, quarterly, and annual basis.
7	MATCHING	Expenses should be reported (recognized) in the same period as the revenues they helped to produce.	Incur expenses on a job in May before getting paid for the job in June. The May expenses are matched with the June revenues on the June income statement.
8	MATERIALITY		
9	FULL-DISCLOSURE		
10	CONSISTENCY		
11	CONSERVATISM		



Identify the Industries

Common size balance sheets of twelve firms are presented on the following page, along with some useful ratios. These companies were chosen because they consist of primarily one major business segment, and the relationships between balance sheet items, profit, and operations are fairly typical of these industries. The following companies are involved:

- Regional bank
- Temporary office personnel agency
- For-profit hospital chain
- Warehouse club
- Major passenger airline
- Major regional utility company
- Manufacturer of oral, personal, and household care products
- Hotel chain
- Upscale department store chain
- Discount department store chain
- International oil company
- Defense contractor

The financial statement dates are noted at the top of each column. Use the ratios, common size statements, and your knowledge of business operations and conditions at the time these data were generated to identify the companies.

41

EXHIBIT 1

	Jun-06 A	Dec-05 B	Dec-05 C	Jan-06 D	Dec-05 E	Jan-06 F	Dec-05 G	Dec-05 H	Dec-05 I	Dec-05 J	Dec-05 K	Sep-06 L
Cash and Marketable Securities	13.5	2.1	2.0	0.9	32.6	0.2	13.4	3.3	0.2	1.2	17.7	2.1
Receivables	7.9	9.4	7.7	32.7	63.2	2.3	7.2	14.7	6.0	13.4	55.4	2.8
Inventories	—	37.8	6.2	22.9	—	42.6	0.5	10.1	1.6	2.0	—	30.6
Other Current Assets	5.4	4.3	3.1	2.5	—	1.1	2.4	2.8	1.6	4.5	4.6	1.8
Total Current Assets	26.8	53.6	19.0	59.0	95.8	46.2	23.5	30.9	9.4	21.1	77.7	37.3
Plant & Equipment	55.6	16.1	71.7	40.4	1.8	50.3	55.4	28.2	81.1	49.0	11.7	58.8
Investments	6.0	1.9	6.2	—	—	—	19.4	—	0.7	10.5	—	—
Goodwill	2.2	25.7	—	—	0.3	—	—	35.9	—	17.6	7.7	1.0
Other Noncurrent Assets	9.4	2.7	3.1	0.6	2.1	3.5	1.7	5.0	8.8	1.8	2.9	2.9
Total Noncurrent Assets	73.2	46.4	81.0	41.0	4.2	53.8	76.5	69.1	90.6	78.9	22.3	62.7
Total Assets	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Accounts Payable	12.6	10.6	9.3	10.1	84.7	17.2	10.0	9.7	3.7	4.2	7.4	25.3
Notes Payble	—	12.2	1.9	8.5	6.0	6.5	—	2.7	3.5	—	—	1.2
Current Portion of L/T Debt	0.8	0.1	0.5	2.7	—	0.9	7.1	0.5	2.8	1.2	—	0.2
Unearned Revenues	11.6	3.5	—	—	—	—	—	—	—	—	—	—
Other Current Liabilities	4.8	11.1	8.8	9.1	0.9	5.9	0.4	10.1	5.2	8.4	26.3	9.4
Total Current Liabilities	29.8	37.5	20.5	30.4	91.6	30.6	7.5	23.0	15.2	13.8	33.7	36.1
L/T Debt	17.8	15.1	8.5	13.4	0.5	28.2	34.9	39.2	31.8	35.9	—	25.0
Other Noncurrent Liabilities	30.5	3.8	26.7	4.1	—	1.9	6.6	15.9	20.0	14.5	—	2.7
Total Liabilities	78.1	56.4	55.7	47.9	92.1	60.7	59.0	78.1	67.0	64.2	33.7	63.8
Preferred Stock	1.1	—	(0.1)	—	—	—	—	5.3	5.9	—	—	—
Common Stock	1.8	2.4	3.1	6.1	0.3	0.6	4.2	2.4	1.3	0.0	5.6	0.0
Additional Paid-in Capital	21.5	2.6	—	—	3.0	1.5	—	13.5	18.7	22.6	1.0	6.5
Retained Earnings	(1.0)	38.5	58.7	47.8	4.5	38.3	41.7	31.3	7.1	12.9	60.5	31.2
Adjustments to Retained Earnings	1.0	0.1	1.5	—	0.1	(1.1)	(0.2)	(11.7)	—	0.3	—	(1.5)
Treasury Stock	(2.5)	—	(18.9)	(1.8)	—	—	(4.7)	(18.9)	—	—	(0.8)	—
Total Stockholders' Equity	21.9	43.6	44.3	52.1	7.9	39.3	41.0	21.9	33.0	35.8	66.3	36.2
Total Liabilities & Stockholders' Equity	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Selected Ratios												
Current Ratio	0.90	1.43	0.92	1.94	1.05	1.51	1.34	1.35	0.63	1.53	2.31	1.03
Inventory Turns (X)	N.M.	2.5	8.9	4.5	N.M.	5.0	N.M.	5.8	2.6	N.M.	N.M.	11.9
Receivables Collection Period	28	29	27	79	N.M.	3	51	49	49	55	54	3
Net Sales/Total Assets	1.019	1.191	1.357	1.505	0.066	2.524	0.539	1.094	0.447	0.890	3.741	3.983
Net Profits/Net Sales	0.053	0.068	0.052	0.040	0.171	0.029	0.105	0.021	0.069	0.060	0.026	0.013
Net Profits/Total Assets	0.054	0.080	0.071	0.060	0.011	0.073	0.057	0.023	0.031	0.053	0.096	0.051
Net Profits/Net Worth	0.217	0.185	0.160	0.116	0.144	0.186	0.138	0.102	0.113	0.147	0.145	0.140

Notes:

* "Adjustments to Retained Earnings" consists primarily of foreign translation adjustments.
* "N.M." means that the ratio is not meaningful, even if calculable, for this company.

CASE 3–32 Cost Structure; Break-Even Point; Target Profits [LO 3–4, LO 3–5, LO 3–6]

Marston Corporation manufactures disposable thermometers that are sold to hospitals through a network of independent sales agents located in the United States and Canada. These sales agents sell a variety of products to hospitals in addition to Marston's disposable thermometer. The sales agents are currently paid an 18% commission on sales, and this commission rate was used when Marston's management prepared the following budgeted absorption income statement for the upcoming year.

Marston Corporation
Budgeted Income Statement

Sales		$30,000,000
Cost of goods sold:		
Variable	$17,400,000	
Fixed	2,800,000	20,200,000
Gross margin		9,800,000
Selling and administrative expenses:		
Commissions	5,400,000	
Fixed advertising expense	800,000	
Fixed administrative expense	3,200,000	9,400,000
Net operating income		$ 400,000

Since the completion of the above statement, Marston's management has learned that the independent sales agents are demanding an increase in the commission rate to 20% of sales for the upcoming year. This would be the third increase in commissions demanded by the independent sales agents in five years. As a result, Marston's management has decided to investigate the possibility of hiring its own sales staff to replace the independent sales agents.

Marston's controller estimates that the company will have to hire eight salespeople to cover the current market area, and the total annual payroll cost of these employees will be about $700,000, including fringe benefits. The salespeople will also be paid commissions of 10% of sales. Travel and entertainment expenses are expected to total about $400,000 for the year. The company will also have to hire a sales manager and support staff whose salaries and fringe benefits will come to $200,000 per year. To make up for the promotions that the independent sales agents had been running on behalf of Marston, management believes that the company's budget for fixed advertising expenses should be increased by $500,000.

Required:

1. Assuming sales of $30,000,000, construct a budgeted contribution format income statement for the upcoming year for each of the following alternatives:

    a. The independent sales agents' commission rate remains unchanged at 18%.

    b. The independent sales agents' commission rate increases to 20%.

    c. The company employs its own sales force.

2. Calculate Marston Corporation's break-even point in sales dollars for the upcoming year assuming the following:

    a. The independent sales agents' commission rate remains unchanged at 18%.

b. The independent sales agents' commission rate increases to 20%.

c. The company employs its own sales force.

3. Refer to your answer to (1)(b) above. If the company employs its own sales force, what volume of sales would be necessary to generate the net operating income the company would realize if sales are $30,000,000 and the company continues to sell through agents (at a 20% commission rate)?

4. Determine the volume of sales at which net operating income would be equal regardless of whether Marston Corporation sells through agents (at a 20% commission rate) or employs its own sales force.

5. Prepare a graph on which you plot the profits for both of the following alternatives.

   a. The independent sales agents' commission rate increases to 20%.

   b. The company employs its own sales force.

   On the graph, use total sales revenue as the measure of activity.

6. Write a memo to the president of Marston Corporation in which you make a recommendation as to whether the company should continue to use independent sales agents (at a 20% commission rate) or employ its own sales force. Fully explain the reasons for your recommendation in the memo.

(CMA, adapted)

CASE 7–30 Plant Closing Decision [LO 7–1, LO 7–2]

Mobile Seating Corporation manufactures seats for automobiles, vans, trucks, and boats. The company has a number of plants, including the Greenville Cover Plant, which makes seat covers.

Miriam Restin is the plant manager at the Greenville Cover Plant but also serves as the regional production manager for the company. Her budget as the regional manager is charged to the Greenville Cover Plant.

Restin has just heard that Mobile Seating has received a bid from an outside vendor to supply the equivalent of the entire annual output of the Greenville Cover Plant for $21 million. Restin was astonished at the low outside bid because the budget for the Greenville Cover Plant's operating costs for the coming year was set at $24.3 million. If this bid is accepted, the Greenville Cover Plant will be closed down.

The budget for the Greenville Cover Plant's operating costs for the coming year is presented on the following page. Additional facts regarding the plant's operations are as follows:

a. Due to the Greenville Cover Plant's commitment to use high-quality fabrics in all of its products, the Purchasing Department was instructed to place blanket purchase orders with major suppliers to ensure the receipt of sufficient materials for the coming year. If these orders are canceled as a consequence of the plant closing, termination charges would amount to 25% of the cost of direct materials.

b. Approximately 350 employees will lose their jobs if the plant is closed. This includes all of the direct laborers and supervisors, management and staff, and the plumbers, electricians, and other skilled workers classified as indirect plant workers. Some of these workers would have difficulty finding new jobs. Nearly all the production workers would have difficulty matching the Greenville Cover Plant's base pay of $12.50 per hour, which is the highest in the area. A clause in Greenville Cover's contract with the union may help some employees; the company must provide employment assistance and job training to its former employees for 12 months after a plant closing. The estimated cost to administer this service would be $0.8 million.

c. Some employees would probably choose early retirement because Mobile Seating Corporation has an excellent pension plan. In fact, $0.7 million of the annual pension expense would continue whether the Greenville Cover Plant is open or not.

d. Restin and her regional staff would not be affected by the closing of the Greenville Cover Plant. They would still be responsible for running three other area plants.

e. If the Greenville Cover Plant were closed, the company would realize about $2 million salvage value for the equipment in the plant. If the plant remains open, there are no plans to make any significant investments in new equipment or buildings. The old equipment is adequate for the job and should last indefinitely.

Greenville Cover Plant Annual Budget for Operating Costs		
Materials		$ 8,000,000
Labor:		
Direct	$6,700,000	
Supervision	400,000	
Indirect plant	1,900,000	9,000,000
Overhead:		
Depreciation—equipment	1,300,000	
Depreciation—building	2,100,000	
Pension expense	1,600,000	
Plant manager and staff	600,000	
Corporate expenses*	1,700,000	7,300,000
Total budgeted costs		$24,300,000

*Fixed corporate expenses allocated to plants and other operating units based on total budgeted wage and salary costs.

Required:

1. Without regard to costs, identify the advantages to Mobile Seating Corporation of continuing to obtain covers from its own Greenville Cover Plant.

2. Mobile Seating Corporation plans to prepare a financial analysis that will be used in deciding whether or not to close the Greenville Cover Plant. Management has asked you to identify:

   a. The annual budgeted costs that are relevant to the decision regarding closing the plant (show the dollar amounts).

   b. The annual budgeted costs that are not relevant to the decision regarding closing the plant and explain why they are not relevant (again show the dollar amounts).

   c. Any nonrecurring costs that would arise due to the closing of the plant and explain how they would affect the decision (again show any dollar amounts).

3. Looking at the data you have prepared in (2) above, should the plant be closed? Show computations and explain your answer.

4. Identify any revenues or costs not specifically mentioned in the problem that Mobile Seating Corporation should consider before making a decision.

(CMA, adapted)

CASE 7–33 SELL OR PROCESS FURTHER DECISION[LO 7–7]

Midwest Mills has a plant that can mill wheat grain into a cracked wheat cereal and then further mill the cracked wheat into flour. The company can sell all the cracked wheat cereal that it can produce at a selling price of $490 per ton. In the past, the company has sold only part of its cracked wheat as cereal and has retained the rest for further milling into flour. The flour has been selling for $700 per ton, but recently the price has become unstable and has dropped to $625 per ton. The costs and revenues associated with a ton of flour follow:

		Per Ton of Flour
Selling price		$625
Cost to manufacture:		
Raw materials:		
Enrichment materials	$ 80	
Cracked wheat	470	
Total raw materials	550	
Direct labor	20	
Manufacturing overhead	60	630
Manufacturing profit (loss)		$ (5)

Because of the weak price for flour, the sales manager believes that the company should discontinue milling flour and use its entire milling capacity to produce cracked wheat to sell as cereal.

The same milling equipment is used for both products. Milling one ton of cracked wheat into one ton of flour requires the same capacity as milling one ton of wheat grain into one ton of cracked wheat. Hence, the choice is between one ton of flour and two tons of cracked wheat. Current cost and revenue data on the cracked wheat cereal follow:

		Per Ton of Cracked Wheat
Selling price		$490
Cost to manufacture:		
Wheat grain	$390	
Direct labor	20	
Manufacturing overhead	60	470
Manufacturing profit		$ 20

The sales manager argues that because the present $625 per ton price for the flour results in a $5 per ton loss, the milling of flour should not be resumed until the price per ton rises above $630.

The company assigns manufacturing overhead cost to the two products on the basis of milling hours. The same amount of time is required to mill either a ton of cracked wheat or a ton of flour. Virtually all manufacturing overhead costs are fixed. Materials and labor costs are variable.

The company can sell all of the cracked wheat and flour it can produce at the current market prices.

Required:

1. Do you agree with the sales manager that the company should discontinue milling flour and use the entire milling capacity to mill cracked wheat if the price of flour remains at $625 per ton? Support your answer with computations and explanations.

2. What is the lowest price that the company should accept for a ton of flour? Again support your answer with computations and explanations.

PROBLEM 9–22 Behavioral Aspects of Budgeting; Ethics and the Manager [LO 9–1]

Granger Stokes, managing partner of the venture capital firm of Halston and Stokes, was dissatisfied with the top management of PrimeDrive, a manufacturer of computer disk drives. Halston and Stokes had invested $20 million in PrimeDrive, and the return on their investment had been unsatisfactory for several years. In a tense meeting of the board of directors of PrimeDrive, Stokes exercised his firm's rights as the major equity investor in PrimeDrive and fired PrimeDrive's chief executive officer (CEO). He then quickly moved to have the board of directors of PrimeDrive appoint himself as the new CEO.

Stokes prided himself on his hard-driving management style. At the first management meeting, he asked two of the managers to stand and fired them on the spot, just to show everyone who was in control of the company. At the budget review meeting that followed, he ripped up the departmental budgets that had been submitted for his review and yelled at the managers for their “wimpy, do nothing targets.” He then ordered everyone to submit new budgets calling for at least a 40% increase in sales volume and announced that he would not accept excuses for results that fell below budget.

Keri Kalani, an accountant working for the production manager at PrimeDrive, discovered toward the end of the year that her boss had not been scrapping defective disk drives that had been returned by customers. Instead, he had been shipping them in new cartons to other customers to avoid booking losses. Quality control had deteriorated during the year as a result of the push for increased volume, and returns of defective TRX drives were running as high as 15% of the new drives shipped. When she confronted her boss with her discovery, he told her to mind her own business. And then, to justify his actions, he said, “All of us managers are finding ways to hit Stokes's targets.”

Required:

1. Is Granger Stokes using budgets as a planning and control tool?
2. What are the behavioral consequences of the way budgets are being used at PrimeDrive?
3. What, if anything, do you think Keri Kalani should do?

(CMA, adapted)

CASE 9–28 Evaluating a Company's Budget Procedures [LO 9–1]

Tom Emory and Jim Morris strolled back to their plant from the administrative offices of Ferguson & Son Manufacturing Company. Tom is manager of the machine shop in the company's factory; Jim is manager of the equipment maintenance department.

The men had just attended the monthly performance evaluation meeting for plant department heads. These meetings had been held on the third Tuesday of each month since Robert Ferguson, Jr., the president's son, had become plant manager a year earlier.

As they were walking, Tom Emory spoke: “Boy, I hate those meetings! I never know whether my department's accounting reports will show good or bad performance. I'm beginning to expect the worst. If the accountants say I saved the company a dollar, I'm called ‘Sir,’ but if I spend even a little too much—boy, do I get in trouble. I don't know if I can hold on until I retire.”

Tom had just been given the worst evaluation he had ever received in his long career with Ferguson & Son. He was the most respected of the experienced machinists in the company. He had been with Ferguson & Son for many years and was promoted to supervisor of the machine shop when the company expanded and moved to its present location. The president (Robert Ferguson, Sr.) had often stated that the company's success was due to the high-quality work of machinists like Tom. As supervisor, Tom stressed the importance of craftsmanship and told his workers that he wanted no sloppy work coming from his department.

When Robert Ferguson, Jr., became the plant manager, he directed that monthly performance comparisons be made between actual and budgeted costs for each department. The departmental budgets were intended to encourage the supervisors to reduce inefficiencies and to seek cost reduction opportunities. The company controller was instructed to have his staff “tighten” the budget slightly whenever a department attained its budget in a given month; this was done to reinforce the plant manager's desire to reduce costs. The young plant manager often stressed the importance of continued progress toward attaining the budget; he also made it known that he kept a file of these performance reports for future reference when he succeeded his father.

Tom Emory's conversation with Jim Morris continued as follows:

Tom:

I really don't understand. We've worked so hard to meet the budget, and the minute we do so they tighten it on us. We can't work any faster and still maintain quality. I think my men are ready to quit trying. Besides, those reports don't tell the whole story. We always seem to be interrupting the big jobs for all those small rush orders. All that setup and machine adjustment time is killing us. And quite frankly, Jim, you were no help. When our hydraulic press broke down last month, your people were nowhere to be found. We had to take it apart ourselves and got stuck with all that idle time.

Jim:

I'm sorry about that, Tom, but you know my department has had trouble making budget, too. We were running well behind at the time of that problem, and if we'd spent a day on that old machine, we would never have made it up. Instead we made the scheduled inspections of the forklift trucks because we knew we could do those in less than the budgeted time.

Tom:

Well, Jim, at least you have some options. I'm locked into what the scheduling department assigns to me and you know they're being harassed by sales for those special orders. Incidentally, why didn't your report show all the supplies you guys wasted last month when you were working in Bill's department?

Jim:

We're not out of the woods on that deal yet. We charged the maximum we could to other work and haven't even reported some of it yet.

Tom:

Well, I'm glad you have a way of avoiding the pressure. The accountants seem to know everything that's happening in my department, sometimes even before I do. I thought all that budget and accounting stuff was supposed to help, but it just gets me into trouble. It's all a big pain. I'm trying to put out quality work; they're trying to save pennies.

Required:

1. Identify the problems that exist in Ferguson & Son Manufacturing Company's budgetary control system and explain how the problems are likely to reduce the effectiveness of the system.

2. Explain how Ferguson & Son Manufacturing Company's budgetary control system could be revised to improve its effectiveness.

(CMA, adapted)

CASE 10–26 Ethics and the Manager [LO 10–3]

Lance Prating is the controller of the Colorado Springs manufacturing facility of Prudhom Enterprises, Inc. The annual cost control report is one of the many reports that must be filed with corporate headquarters and is due at corporate headquarters shortly after the beginning of the New Year. Prating does not like putting work off to the last minute, so just before Christmas he prepared a preliminary draft of the cost control report. Some adjustments would later be required for transactions that occur between Christmas and New Year's Day. A copy of the preliminary draft report, which Prating completed on December 21, follows:

Colorado Springs Manufacturing Facility
Cost Control Report
December 21 Preliminary Draft

	Flexible Budget	Actual Results	Spending Variances
Labor-hours	9,000	9,000	
Direct labor	$162,000	$164,600	$2,600 U
Power	2,700	2,950	250 U
Supplies	28,800	29,700	900 U
Equipment depreciation	226,500	228,300	1,800 U
Supervisory salaries	189,000	187,300	1,700 F
Insurance	23,000	23,000	0
Industrial engineering	160,000	154,000	6,000 F
Factory building lease	46,000	46,000	0
Total expense	$838,000	$835,850	$2,150 F

Tab Kapp, the general manager at the Colorado Springs facility, asked to see a copy of the preliminary draft report. Prating carried a copy of the report to Kapp's office where the following discussion took place:

Lance:

Wow! Almost all of the variances on the report are unfavorable. The only favorable variances are for supervisory salaries and industrial engineering. How did we have an unfavorable variance for depreciation?

Tab:

Do you remember that milling machine that broke down because the wrong lubricant was used by the machine operator?

Lance:

Yes.

Tab:

We couldn't fix it. We had to scrap the machine and buy a new one.

Lance:

This report doesn't look good. I was raked over the coals last year when we had just a few unfavorable variances.

Tab:

I'm afraid the final report is going to look even worse.

Lance:

Oh?

Tab:

The line item for industrial engineering on the report is for work we hired Sanchez Engineering to do for us. The original contract was for $160,000, but we asked them to do some additional work that was not in the contract. We have to reimburse Sanchez Engineering for the costs of that additional work. The $154,000 in actual costs that appears on the preliminary draft report reflects only their billings up through December 21. The last bill they had sent us was on November 28, and they completed the project just last week. Yesterday I got a call from Mary Jurney over at Sanchez and she said they would be sending us a final bill for the project before the end of the year. The total bill, including the reimbursements for the additional work, is going to be …

Lance:

I am not sure I want to hear this.

Tab:

$176,000

Lance:

Ouch!

Tab:

The additional work added $16,000 to the cost of the project.

Lance:

I can't turn in a report with an overall unfavorable variance! They'll kill me at corporate headquarters. Call up Mary at Sanchez and ask her not to send the bill until after the first of the year. We have to have that $6,000 favorable variance for industrial engineering on the report.

Required:

What should Lance Prating do? Explain.

PROBLEM 12–17 Building a Balanced Scorecard[LO 12–4]

Deer Creek ski resort was for many years a small, family-owned resort serving day skiers from nearby towns. Deer Creek was recently acquired by Mountain Associates, a major ski resort operator with destination resorts in several western states. The new owners have plans to upgrade the resort into a destination resort for vacationers staying for a week or more. As part of this plan, the new owners would like to make major improvements in the Lynx Lair Lodge, the resort's on-the-hill fast-food restaurant. The menu at the Lodge is very limited—hamburgers, hot dogs, chili, tuna fish sandwiches, french fries, and packaged snacks. The previous owners of the resort had felt no urgency to upgrade the food service at the Lodge because there is little competition. If skiers want lunch on the mountain, the only alternatives are the Lynx Lair Lodge or a brown bag lunch brought from home.

As part of the deal when acquiring Deer Creek, Mountain Associates agreed to retain all of the current employees of the resort. The manager of the Lodge, while hardworking and enthusiastic, has very little experience in the restaurant business. The manager is responsible for selecting the menu, finding and training employees, and overseeing daily operations. The kitchen staff prepares food and washes dishes. The dining room staff takes orders, serves as cashiers, and cleans the dining room area.

Shortly after taking over Deer Creek, management of Mountain Associates held a day-long meeting with all of the employees of the Lynx Lair Lodge to discuss the future of the ski resort and management's plans for the Lodge. At the end of this meeting, top management and Lodge employees created a balanced scorecard for the Lodge that would help guide operations for the coming ski season. Almost everyone who participated in the meeting seemed to be enthusiastic about the scorecard and management's plans for the Lodge.

The following performance measures were included on the balanced scorecard for the Lynx Lair Lodge:

- Customer satisfaction with service, as measured by customer surveys.
- Total Lynx Lair Lodge profit.
- Dining area cleanliness, as rated by a representative from Mountain Associates management.
- Average time to prepare an order.
- Customer satisfaction with menu choices, as measured by surveys.
- Average time to take an order.
- Percentage of kitchen staff completing institutional cooking course at the local community college.
- Sales.
- Percentage of dining room staff completing hospitality course at the local community college.
- Number of menu items.

Mountain Associates will pay for the costs of staff attending courses at the local community college.

Required:

1. Using the above performance measures, construct a balanced scorecard for the Lynx Lair Lodge. UseExhibit 12-5 as a guide. Use arrows to show causal links and indicate with a + or − whether the performance measure should increase or decrease.
2. What hypotheses are built into the balanced scorecard for the Lynx Lair Lodge? Which of these hypotheses do you believe are most questionable? Why?
3. How will management know if one of the hypotheses underlying the balanced scorecard is false?