

5. Develop product costs for the three products on the basis of an activity-based costing system. (Round to the nearest cent.)
6. Calculate a target price for each product, using Gigabyte's pricing formula. Compare the new target prices with the current actual selling prices and previously reported product costs.
7. **Build a spreadsheet:** Construct an Excel spreadsheet to solve requirements (5) and (6) above. Show how the solution will change if the inspection activity was divided among the three products in the following manner: product G, 20%; product T, 40%, and product W, 40%.

Refer to the new target prices for Gigabyte's three products, based on the new activity-based costing system calculated in the preceding problem.

Required: Write a memo to the company president commenting on the situation Gigabyte, Inc. has been facing regarding the market for its products and the actions of its competitors. Discuss the strategic options available to management. What do you recommend, and why?

Refer to the product costs developed in requirement (5) of Problem 5-60. Prepare a table showing how Gigabyte's traditional, volume-based product-costing system distorts the product costs of gismos, thingamajigs, and whatchamacallits. (You may wish to refer to Exhibit 5-10 for guidance. Because of rounding in the calculation of the product costs, there will be a small rounding error in this cost distortion analysis as well.)

■ Problem 5-61

Strategic Cost Analysis;
Continuation of Preceding
Problem

(LO 5-2, 5-5, 5-7)



■ Problem 5-62

Cost Distortion; Continuation
of Problem 5-60

(LO 5-2, 5-5)

Traditional system undercosts
product W by \$120.25 per unit

■ Problem 5-63

Basic Elements of a Production
Process; Non-Value-
Added Costs

(LO 5-7, 5-8, 5-10)



Better Bagels, Inc. manufactures a variety of bagels, which are frozen and sold in grocery stores. The production process consists of the following steps.

1. Ingredients, such as flour and raisins, are received and inspected. Then they are stored until needed.
2. Ingredients are carried on hand carts to the mixing room.
3. Dough is mixed in 40-pound batches in four heavy-duty mixers.
4. Dough is stored on large boards in the mixing room until a bagel machine is free.
5. A board of dough is carried into the bagel room. The board is tipped, and the dough slides into the hopper of a bagel machine. This machine pulls off a small piece of dough, rolls it into a cylindrical shape, and then squeezes it into a doughnut shape. The bagel machines can be adjusted in a setup procedure to accommodate different sizes and styles of bagels. Workers remove the uncooked bagels and place them on a tray, where they are kept until a boiling vat is free.
6. Next the trays of uncooked bagels are carried into an adjoining room, which houses three 50-gallon vats of boiling water. The bagels are boiled for approximately one minute.
7. Bagels are removed from the vats with a long-handled strainer and placed on a wooden board. The boards full of bagels are carried to the oven room, where they are kept until an oven rack is free. The two ovens contain eight racks which rotate but remain upright, much like the seats on a Ferris wheel. A rack full of bagels is finished baking after one complete revolution in the oven. When a rack full of bagels is removed from the oven, a fresh rack replaces it. The oven door is opened and closed as each rack completes a revolution in the oven.
8. After the bagels are removed from the oven, they are placed in baskets for cooling.
9. While the bagels are cooling, they are inspected. Misshapen bagels are removed and set aside. (Most are eaten by the staff.)
10. After the bagels are cool, the wire baskets are carried to the packaging department. Here the bagels are dumped into the hopper on a bagging machine. This machine packages a half-dozen bagels in each bag and seals the bag with a twist tie.
11. Then the packaged bagels are placed in cardboard boxes, each holding 24 bags. The boxes are placed on a forklift and are driven to the freezer, where the bagels are frozen and stored for shipment.

Required:

1. Identify the steps in the bagel-production process that fall into each of the following categories: process time, inspection time, move time, waiting time, storage time.
2. List the steps in the production process that could be candidates for non-value-added activities.

■ Problem 5-64

Two-Dimensional Activity-Based Costing; Activity Analysis; ABM
(LO 5-8)

Midwest Home Furnishings Corporation (MHFC) manufactures a variety of housewares for the consumer market in the Midwest. The company's three major product lines are cooking utensils, tableware, and flatware. MHFC implemented activity-based costing four years ago and now has a well-developed ABC system in place for determining product costs. Only recently, however, has the ABC system been systematically used for the purposes of activity-based management. As a pilot project, MHFC's controller asked the ABC project team to do a detailed activity analysis of the purchasing activity. The following specific activities were identified.

1. Receipt of parts specifications from the Design Engineering Department.
2. Follow-up with design engineers to answer any questions.
3. Vendor (supplier) identification.
4. Vendor consultations (by phone or in person).
5. Price negotiation.
6. Vendor selection.
7. Ordering (by phone or mail).
8. Order follow-up.
9. Expediting (attempting to speed up delivery).
10. Order receiving.
11. Inspection of parts.
12. Return of parts not meeting specifications.
13. Consultation with design engineers and production personnel if parts do not satisfy intended purpose.
14. Further consultation and/or negotiation with vendor if necessary.
15. Ship parts back to vendor if necessary.
16. If satisfactory, move parts to storage.

Required:

1. Draw a diagram to depict MHFC's two-dimensional activity-based costing efforts. The diagram should include the following:
 - a. The cost assignment role of ABC, with the cost pools, activities, and product lines represented.
 - b. The process view of ABC, with the purchasing activities displayed. Also indicated here will be the linkages among the activities. (To save space, indicate the activities by their numbers.)
 - c. The activity evaluation phase of two-dimensional ABC.
2. Identify the triggers for each of the following activities in MHFC's purchasing activity analysis:
 - Follow-up with design engineers (activity 2)
 - Expediting (activity 9)
 - Inspection of parts (activity 11)
 - Return of parts (activity 12)
 - Consultation with design engineers and production personnel (activity 13)
3. For each of the activities listed in requirement (2), identify the possible root causes.
4. Choose four activities in MHFC's purchasing function, and suggest a performance measure for each of these activities.

■ Problem 5-65

Customer-Profitability Analysis; Activity-Based Costing
(LO 5-9)

1. Operating income, Trace
Telecom: \$7,000

Fresno Fiber Optics, Inc. manufactures fiber optic cables for the computer and telecommunications industries. At the request of the company vice president of marketing, the cost management staff has recently completed a customer-profitability study. The following activity-based costing information was the basis for the analysis.

Customer-Related Activities	Cost Driver Base	Cost Driver Rate
Sales activity	Sales visits	\$1,000
Order taking	Purchase orders	200
Special handling	Units handled	50
Special shipping	Shipments	500

Cost-driver data for two of Fresno's customers for the most recent year are

Customer-Related Activities	Trace Telecom	Caltex Computer
Sales activity.....	8 visits	6 visits
Order taking	15 orders	20 orders
Special handling.....	800 units handled	600 units handled
Special shipping	18 shipments	20 shipments

The following additional information has been compiled for Fresno Fiber Optics for two of its customers, Trace Telecom and Caltex Computer, for the most recent year:

	Trace Telecom	Caltex Computer
Sales revenue.....	\$190,000	\$123,800
Cost of goods sold	80,000	62,000
General selling costs.....	24,000	18,000
General administrative costs	19,000	16,000

Required:

1. Prepare a customer profitability analysis for Trace Telecom and Caltex Computer. (*Hint:* Refer to Exhibit 5-13 for guidance.)
2. **Build a spreadsheet:** Construct an Excel spreadsheet to solve requirement (1) above. Show how the solution will change if the following information changes: Trace Telecom's sales revenue was \$185,000 and Caltex Computer's cost of goods sold was \$59,000.

Refer to the information given in the preceding problem for Fresno Fiber Optics and two of its customers, Trace Telecom and Caltex Computer. Additional information for six of Fresno's other customers for the most recent year follows:

Customer	Operating Income
Golden Gate Service Associates	\$71,000
Tele-Install, Inc.	(18,000)
Graydon Computer Company	60,000
Mid-State Computing Company	42,000
Network-All, Inc.	93,000
The California Group	6,000

Required:

1. Prepare Fresno Fiber Optics' customer profitability profile for the most recent year.
2. As Fresno Fiber Optics' director of cost management, write a memo to the company's vice president of marketing that will accompany the customer profitability profile. Include a brief explanation of the methodology used and comment on the results.

Problem 5-66

Customer-Profitability Profile;
Continuation of Preceding
Problem (LO 5-9)

Tele-Install, operating profit:
\$(18,000)

