MBA 510: Managerial Accounting

Case Study

Due: June 21st

Traditional VS. Activity-Based Costing Systems

Madison Electric Pump Corporation manufactures electric pumps for commercial use. The company produces three models, designated as regular, advanced, and deluxe. The company uses a job-order cost accounting system with manufacturing overhead applied on the basis of direct-labor hours. The system has been in place with little change for 25 years. Product costs and annual sales data are as follows:

	Regular Model	Advanced Model	Deluxe Model
Annual sales (units)	20,000	1,000	10,000
Product costs:			
Direct material	$ 20	$ 50	$ 84
Direct labor	20 (1 hr. at $20)	40 (2 hr. at $20)	40 (2 hr. at $20)
Manufacturing overhead*	170 (1 hr. at $170)	340 (2 hr. at $170)	340 (2 hr. at $170)
Total product cost	$210	$430	$464

*The calculation of the predetermined overhead rate is as follows:

Manufacturing-overhead budget:

Depreciation, machinery	$2,960,000
Maintenance, machinery	240,000
Depreciation, taxes, and insurance for factory	600,000
Engineering	700,000
Purchasing, receiving and shipping	500,000
Inspection and repair of defects	750,000
Material handling	800,000
Miscellaneous manufacturing overhead costs	590,000
Total	$7,140,000

Direct-labor budget:

Regular model:	20,000 hours
Advanced model:	2,000 hours
Deluxe model:	20,000 hours
Total	42,000 hours

$$\text{Predetermined overhead rate: } \frac{\text{Budgeted overhead}}{\text{Budgeted direct-labor hours}} = \frac{\$7{,}140{,}000}{42{,}000 \text{ hours}} = \$170 \text{ per hour}$$

Hilton, R. W. (2013). Managerial accounting: creating value in a dynamic business environment. Retrieved from http://connect.mheducation.com/connect/hmInstructorSectionHomePortal.do?sectionId=38690402

For the past 10 years, the company's pricing formula has been to set each product's target price at 110 percent of its full product cost. Recently, however, the regular-model pump has come under increasing price pressure from offshore competitors. The result was that the price on the regular model has been lowered to $220.

The company president recently asked the controller, "Why can't we compete with these other companies? They're selling pumps just like our regular model for $212. That's only two bucks more than our production cost. Are we really that inefficient? What gives?"

The controller responded by saying, "I think this is due to an outmoded product-costing system. As you may remember, I raised a red flag about our system when I came on board last year. But the decision was to keep our current system in place. In my judgment, our product-costing system is distorting our product costs. Let me run a few numbers to demonstrate what I mean."

Getting the president's go-ahead, the controller compiled the basic data needed to implement an activity-based costing system. These data are displayed in the following table. The percentages are the proportion of each cost driver consumed by each product line.

		Product Lines		
Activity Cost Pool	**Cost Driver**	**Regular Model**	**Advanced Model**	**Deluxe Model**
I: Depreciation, machinery Maintenance, machinery	Machine time	39%	13%	48%
II: Engineering Inspection and repair of defects	Engineering hours	47%	6%	47%
III: Purchasing, receiving, and shipping Material handling	Number of material orders	47%	8%	45%
IV: Depreciation, taxes, and insurance for factory Miscellaneous manufacturing overhead	Factory space usage	42%	15%	43%

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Required:

1. Compute the target prices for the three pump models, based on the traditional, volume-based product-costing system.

2. Compute new product costs for the three products, based on the new data collected by the controller. Round to the nearest cent.

3. Calculate a new target price for the three products, based on the activity-based costing system. Compare the new target price with the current actual selling price for the regular model pump.

4. Write a memo to the company president explaining what has been happening as a result of the firm's traditional volume-based product-costing system.

5. What strategic options does management have? What do you recommend, and why?