

Cost accounting
questions on
wilkerson company
case analysis
assignment



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Wilkerson Company 1. What is the competitive situation faced by Wilkerson?

The critical product in term of market competition is the pumps of Wilkerson Company. The pumps are Wilkersons major product line with a production of about 12, 500 units per month.

Pumps currently have the lowest gross margin among all products, because competitors had been reducing prices on pumps and Wilkerson adopted its prices in order to remain competitive and to maintain the volume. 2. Given some apparent problems with Wilkersons cost system, should executives abandon overhead assignment to products entirely by adopting a contribution margin approach in which manufacturing overhead is treated as a period expense?

Our conclusion is, that they should not adopt a contribution margin approach, because we know that the current contribution margin of the major product (pumps) has a downward tendency and therefore the risk to generate a loss with the pumps is very high, because we know that there is a fast moving trend from production-run labor hours towards machine hours (automation) as well as an increasing tendency in shipping, packaging efforts. In general we can conclude that fixed costs are rising while the gross margin of our major product is shrinking.

This is why we advise not to adopt a contribution margin approach. 3. How does Wilkersons existing cost system operate? Develop a diagram to show how costs flow from factory expense accounts to products. The existing cost accounting system is based on a normal job costing system. The cost of purchased raw materials is recorded in the direct materials account,

therefore either accounts payable account can be increased or cash account decreased. Raw materials are transferred into the work-in process account on the debit side and therefore deducted in the direct materials account.

In the debit side of the WiP account - direct labor as well as MOH costs are debited as well (and in parallel credited on the direct labor account and the MOH account). When goods are finished, the WiP account is credited for the amount of good finished, this amount is transferred to the Finished Goods account, which is furthermore credited for the same amount (and costs are transferred to COGS account) if goods are sold. 4. Develop and diagram an activity based costing model using the information in the case. Provide your best estimates about the costs and profitability of Wilkersons three product lines.

What difference does your cost assignment have on reported product costs and profitability? What causes any shifts in cost and profitability? In order to calculate the activity-based overhead rates, we use the information of

Exhibit 1 and Exhibit 4: Exhibit 1: Operating Results March 2000 Figures

2152500 271250 458000 336000 40000 Percentages 100, 00% Sales DL

Expense DM Expense MOH machine-related expenses setup labor receiving

& production control engineering packaging & shipping total manufacturing

overhead gross margin SG&A Expense Operating income (pre-tax) 180000

100000 150000 806000 617250 559650 57600 9, 00% 3, 00% Exhibit 4:

Monthly Production & Operating Statistics (March 2000) Valves 7500 3750 10

10 250 Pumps 12, 5 6250 50 70 375 Flow Controllers 4000 1200 100 220

625 Total 24000 11200 160 300 1250 high production 24000 12000 180 400

1250 Production (units) machine hours production runs number of shipments

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hours of engineering work Activity based overhead rates = activity cost pool / activity cost driver

Machine related expenses = 336,000 / 11200
 setup labor = 40,000 / 160 receiving & production control = 180,000 / 24000 engineering = 100,000 / 1250 packaging & shipping = 150,000 / 300

ctivity based overhead rates machine-related expenses setup labor receiving & production control engineering packaging & shipping \$ \$ \$ \$ \$ 30,00 250,00 1. 125,00 80,00 500,00

Product Costs per unit direct materials direct labor Manufacturing overhead by activity: machine-related expenses 3,750 machine hours x 30\$ Valves (\$) \$ 16,00 \$ 10,00 Pumps (\$) \$ \$ 20,00 12,50 Flow Controllers (\$) \$ 22,00 \$ 10,00 \$ 112.500,00 6,250 machine hours x 30\$ 1,200 machine hours x 30\$ setup labor 10 production runs x 250\$ 50 production runs x 250\$ 100 production runs x 250\$ receiving & production control 10 production runs x 1.25\$ 50 production runs x 1.125\$ 100 production runs x 1.125\$ engineering 250h engineering x 80\$ 375h engineering x 80\$ 625h engineering x 80\$ packaging & shipping 10 nr. shipments x 500\$ 70 nr. shipments x 500\$ 220 nr. shipments x 500\$ number of units per batch total overhead cost overhead cost / unit cost per unit \$

187.500,00 \$ 36.000,00 \$ 2.500,00 \$ 12.500,00 \$ 25.000,00 \$ 11.250,00 \$ 56.250,00 \$ 112.500,00 \$ 20.000,00 \$ 30.000,00 \$ 50.000,00 \$ 5.000,00 \$ 7.500 151.250 20 35.000,00 \$ 12.500 321.250 26 \$ 58,20 \$ 110.00,00 4.000 333.500 83 115,38 \$ 46,17

If we compare the old job costing method with the Activity based costing method we can see in the table below that the activity base rate gives us a much more accurate insight in allocating the manufacturing overhead costs. In fact, the activity based overhead calculation shows us that the activity rates for Valves and Pumps are lower than the rates used in plantwide production rates, but the activity

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based rate for Flow Controllers is around 50% higher than the cost calculated in the job costing method.

The reason for this difference in our opinion can be traced back to the high receiving and production control costs as well as packaging & shipping costs.

Comparison of Job Costing & ABC Costing plantwide rate activity rate Valves

(\$) \$ 56, 00 \$ 46, 17 Pumps (\$) \$ 70, 00 \$ 58, 20 Flow Controllers (\$) \$ 62,

00 \$ 115, 38 Product Profitability Analysis Valves \$ \$ \$ Pumps \$ \$ \$ Flow

Controllers \$ 62, 00 \$ 115, 38 \$ 95, 38 job costing unit costs ACB unit costs

target selling price 56, 00 46, 17 86, 15 70, 00 58, 20 107, 69 lanned Gross

Margin (%) actual selling price job costing Gross Margin (%) ABC Gross

Margin (%) \$ 35, 00% 86, 00 34, 90% 46, 32% \$ 35, 00% 87, 00 19, 50% 33,

10% \$ 35, 00% 105, 00 41, 00% -9, 88% Due to the more accurate allocation

based on activity-based cost allocation method we conclude that we have a

significantly increased profitability for Valve and Pumps, but the Flow

Controllers is a loss making product. The shift in cost and profitability is

caused mainly by change of allocation of three major overhead costs:

receiving and production control, engineering and packaging and shipping

costs. 2 % of receiving and production control cost, 50% of engineering costs

and 73% of packaging and shipping costs (totals 63% of total overhead

costs) now is charged to cost of flow controllers based on ABC costing

method. 5. Based on your analysis of question 4, what actions might

Wilkerson? s management team consider to improve the company? s

profitability? Based on our above analysis we see that is the flow controllers

is a loss making product based on ABC costing model. Therefore we have to

consider two options to improve the company's profitability: 1) to increase the sale price.

In such a case to obtain the 35% gross margin the price should be increased \$177 per unit. We believe such a price will be not competitive on the market

2) the company should shut down and abandon the production of flow controllers. By doing this the company will significantly reduce the overhead costs and will increase profitability.

6. What concerns, if any, do you have with the cost estimates you prepared in the answer to question 4? What other information or analysis would you want for better cost and profitability estimates? We need to perform more detail analysis of overhead cost to

define what cost is fixed and what cost is variable. Based on such analysis we can better estimate what is our fixed costs and how it would impact on the overall profitability if we abandon one of our product lines. We

prepared the contribution income statement for production lines Valves
Sales \$ 645,000, 00 Pumps \$ 1,087,500, 00 Flow contr \$ 420,000, 00 \$ 2,

152,500, 00 Direct labor costs VC Direct material costs Machine-related expenses (\$ 75,000, 00) (\$ 120,000, 00) (\$ 112,500, 00) (\$ 156,250, 00)

(\$ 250,000, 00) (\$ 187,500, 00) (\$ 40,000, 00) (\$ 88,000, 00) (\$ 36,00,

00) (\$ 271,250, 00) (\$ 458,000, 00) (\$ 336,000, 00) contribution margin \$

337,500, 00 52% \$ 493,750, 00 45% (\$ 12,500, 00) (\$ 56,250, 00) (\$ 30,

000, 00) (\$ 35,000, 00) \$ 256,000, 00 61% (\$ 25,000, 00) (\$ 112,500, 00)

(\$ 50,000, 00) (\$ 110,000, 00) \$ 1,087,250, 00 MOH FC Setup labor

Receiving and production control Engineering Packaging and shipping (\$ 2,

500, 00) (\$ 11,250, 00) (\$ 20,000, 00) (\$ 5,000, 00) (\$ 40,000, 00) (\$ 180,

000, 00) (\$ 100,000, 00) (\$ 150,000, 00) General selling & administration

expenses (\$ 173. 724, 42) (\$ 254. 152, 39) (\$ 131. 773, 19) (\$ 559. 650, 00)

Operating income (pre tax) \$ 125. 025, 58 105. 847, 61 (\$ 173. 273, 19) \$

57. 600, 00 In our opinion Wilkerson has to adopt a contribution margin

income statement in order to check the real increase of costs for every unit produced. In order to do this an analysis of the MOH has to be carried out.

From the analysis arise the fact that: Machine related expenses are variable

costs (i. e. 0, 5 hour for one pump) Setup labor (step costs) Receiving and

production control (step costs) Engineering (step costs) Packaging and

shipping (step costs) Step cost have to be considered as fixed costs for a

relative small increase in production: units 1 Production run 1 shipment 1 our

of engineering work 750 750 30 units 250 179 33 units 40 18 6 According to

the last sentence of the text of this case, the technician of the company

noticed that last year, when production increased till to 12000 hours per

month, 180 production run per month, and 400 shipments per month, they

did not experience delay or use of overtime. Using a contribution margin we

can separate variable from fix costs, in order not to charge fixed overhead

costs as variable to the unit produced. 7. Wilkerson has been compensating

salespersons with commissions on their gross sales volumes (less returns).

Parker wonders whether the company should change this incentive system?

Salespersons' Commissions currently are based on their gross sales volumes.

There are difficulties with the pumps price and competitors taking over

market share. Pumps profitability is high so the sales should be increased,

and we would recommend a differentiation in the incentives by product sales

volume, versus overall sales volume, e. g. pumps sales should be

incentivetise more with higher % in order to to increase the market share in

recent loss in pump sales.

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