

3-41 (a) Uyeno Electronic Company: Job bid sheet

Job Bid Sheet			
Customer: Takayama, Inc.			
Product: C371			
Number of units: 1,000			
	Quantity	Price	Amount
Direct material	2,000 units	\$10 per unit	\$20,000
Direct labor	1,000 hours	\$10 per hour	10,000
Manufacturing support	1,000 hours	\$6 ^a per direct labor hour	<u>6,000</u>
Total estimated costs			\$36,000
Markup (20%)			<u>7,200</u>
Bid price			<u><u>\$43,200</u></u>

^a \$300,000 ÷ 50,000 = \$6 per direct labor hour

(b) Uyeno Electronic Company: Job cost sheet

Job Cost Sheet			
Customer: Takayama, Inc.			
Product: C371			
Number of units: 1,000			
	Quantity	Price	Amount
Direct material	2,100 units	\$9.75 per unit	\$20,475
Direct labor	1,000 hours	\$11 per hour	11,000
Manufacturing support	1,000 hours	\$6 per direct labor hour	<u>6,000</u>
Total actual costs			<u><u>\$37,475</u></u>

- (c) The differences between actual and estimated material quantity and material price per unit could reflect poorer quality materials (for example, a higher percentage of defects) that resulted in requisitioning a larger number of units of material than expected. Although the job required the same number of labor hours as estimated, the hourly rate was higher than estimated. This may be because there are several grades of labor with differing wage rates, while a single common rate is used for estimating labor costs on jobs. Another possible explanation is that the labor union negotiated a new labor contract with higher wages.

4-30:

- (a) Manufacturing support cost driver rate

$$= \frac{\$11,500,000}{100,000 + 300,000}$$

$$= \$28.75 \text{ per direct labor hour.}$$

Costs Per Unit	Product X21	Product Y37
Direct materials cost	\$120.00	\$140.00
Direct labor cost		
$2 \times \$ (1,000,000 \div 100,000)$	20.00	
$3 \times \$ (4,500,000 \div 300,000)$		45.00
Manufacturing support cost		
$\$28.75 \times (100,000 \div 50,000)$	<u>57.50</u>	
$\$28.75 \times (300,000 \div 100,000)$		<u>86.25</u>
Unit cost	<u>\$197.50</u>	<u>\$271.25</u>

- (b)
- | Activity | Activity Costs | Cost Driver Quantity | Cost Driver Rate | Costs Allocated to Products | |
|-----------------|---------------------|----------------------|------------------|--------------------------------------|--------------------------------------|
| | | | | X21 | Y37 |
| Handling | \$3,000,000 | 60,000 | 50 | $50 \times 40,000$ | $50 \times 20,000$ |
| Number of parts | 2,400,000 | 20,000 | 120 | $120 \times 12,000$ | $120 \times 8,000$ |
| Design changes | 3,300,000 | 3,000 | 1,100 | $1,100 \times 2,000$ | $1,100 \times 1,000$ |
| Setups | <u>2,800,000</u> | 14,000 | 200 | <u>$200 \times 8,000$</u> | <u>$200 \times 6,000$</u> |
| Total | <u>\$11,500,000</u> | | | <u>\$7,240,000</u> | <u>\$4,260,000</u> |

Costs Per Unit	X21	Y37
Direct materials cost	\$120.00	\$140.00
Direct labor cost	20.00	45.00
Manufacturing support cost		
\$7,240,000 ÷ 50,000	<u>144.80</u>	
\$4,260,000 ÷ 100,000		<u>42.60</u>
Unit cost	<u>\$284.80</u>	<u>\$227.60</u>

- (c) Activity-based costing produces more accurate estimates of job costs because it takes into account the cost drivers that give rise to support costs.

Cost-based Prices	Product X21	Product Y37
Traditional costing		
1.25 × unit costs in part (a)	\$246.88	\$339.06
Activity-based costing		
1.25 × unit costs in part (b)	\$356.00	\$284.50

If Endo plans to continue to use cost-based pricing, it should use activity-based costs as the basis for its markups. Note X21's current price is not even covering its manufacturing costs as determined using activity-based costing. Conversely, Y37 may be overpriced. Endo should consider raising X21's price and could consider lowering Y37's price if competitors are selling the same product for a lower price.

- (e) The company sells half as many X21's as Y37's, but X21 has twice as many design changes and 50% more parts. These facts suggest that the company can explore ways to reduce the number of design changes and the number of parts. Management accountants would be involved in developing and communicating the cost of design changes and parts proliferation; design engineers would be directly involved in studying different designs and trying to reduce the number of parts. In addition, sales staff who communicate with customers could make greater efforts to understand customer needs and convey this information to the design engineers.