

## **CASE: Activity-Based Costing as an Alternative to Traditional Product Costing**

Coffee Bean Ltd. (CBL), is a processor and distributor of a variety of blends of coffee. The company buys coffee beans from around the world and roasts, blends, and packages them for resale. CBL currently has 40 different coffees that it sells to gourmet shops in one-pound bags. The major cost of the coffee is raw materials. However, the company's predominantly automated roasting, blending, and packing process requires a substantial amount of manufacturing overhead. The company uses relatively little direct labour.



Some of CBL's coffees are very popular and sell in large volumes, while a few of the newer blends have very low volumes. CBL prices its coffee at manufacturing cost plus a mark-up of 30%. If CBL's prices for certain coffees are significantly higher than market, adjustments are made to bring CBL's prices more into alignment with the market since customers are somewhat price conscious.

For the coming year, CBL's budget includes estimated manufacturing overhead cost of £3,000,000. CBL assigns manufacturing overhead to products on the basis of direct labour-hours. The expected direct labour cost totals £600,000, which represents 50,000 hours of direct labor time. Based on the sales budget and expected raw materials costs, the company will purchase and use £6,000,000 of raw materials (mostly coffee beans) during the year.

The expected costs for direct materials and direct labour for one-pound bags of two of the company's coffee products appear below.

	<b>Mona Loa</b>	<b>Malaysian</b>
Direct materials	£4.20	£3.20
Direct labour (0.025 hours per bag)	£0.30	£0.30

CBL's controller believes that the company's traditional costing system may be providing misleading cost information. To determine whether or not this is correct, the controller has prepared an analysis of the year's expected manufacturing overhead costs, as shown in the following table:

Activity cost pool	Activity measure	Expected activity for the year	Expected cost for the year
<b>Purchasing</b>	Purchase orders	1,710 orders	£513,000
<b>Material handling</b>	Number of setups	1,800 setups	720,000
<b>Quality control</b>	Number of batches	600 batches	144,000
<b>Roasting</b>	Roasting hours	90,100 hours	961,000
<b>Blending</b>	Blending hours	33,500 hours	402,000
<b>Packaging</b>	Packaging hours	25,000 hours	260,000
<b>Total manufacturing overhead cost</b>			<u>£3,00,000</u>

Data regarding the expected production of Mona Loa and Malaysian coffee are presented below.

	<b>Mona Loa</b>	<b>Malaysian</b>
<b>Expected sales</b>	100,000 pounds	2,000 pounds
<b>Batch size</b>	10,000 pounds	500 pounds
<b>Setups</b>	3 per batch	3 per batch
<b>Purchase order size</b>	20,000 pounds	500 pounds
<b>Roasting time per 100 pounds</b>	1 hour	1 hour
<b>Blending time per 100 pounds</b>	0.5 hour	0.5 hour
<b>Packaging time per 100 pounds</b>	0.1 hour	0.1 hour

*Required:*

1. Using direct labour-hours as the base for assigning manufacturing overhead cost to products, do the following:
  - a. Determine the predetermined overhead rate that will be used during the year.
  - b. Determine the unit product cost of one pound of the Mona Loa coffee and one pound of the Malaysian coffee.
2. Using activity-based costing as the basis for assigning manufacturing overhead cost to products, do the following:
  - a. Determine the total amount of manufacturing overhead cost assigned to the Mona Loa coffee and to the Malaysian coffee for the year.
  - b. Using the data developed in (2a) above, compute the amount of manufacturing overhead cost per pound of the Mona Loa coffee and the Malaysian coffee. Round all computations to the nearest whole cent.
  - c. Determine the unit product cost of one pound of the Mona Loa coffee and one pound of the Malaysian coffee.
3. Write a brief memo to the president of CBL explaining what you have found in (1) and (2) above and discussing the implications to the company of using direct labour as the base for assigning manufacturing overhead cost to products.