Eficaz (Pty) Ltd (‘Eficaz’) is an engineering company that manufactures and supplies consumable products for use in the mining and industrial fluid transfer industries. The key raw material used in its manufacturing processes is steel and Eficaz uses a range of machining technologies to make end products.

The current chief executive officer of Eficaz, Mr Rob Oliveira, acquired 100% of the shares in issue in 2004 from the founding shareholders. The business has been transformed since then by expanding the product range and focusing on production efficiencies. Mr Oliveira would like to grow the business further in anticipation of the sale of the company in a few years’ time.

Eficaz’s target gross profit margin is 30% and the company has achieved or exceeded this over the past three financial years.

Eficaz has unutilised manufacturing capacity. For the year ending 31 December 2013, it is estimated that Eficaz will have 18 400 machine hours and 25 600 direct labour hours available for the manufacture of additional products. A total of 132 000 direct labour hours (excluding any overtime) is available for the 2013 financial year.

**Potential opportunities**

The company has been approached by two potential customers to manufacture specific products for them on an ongoing basis. Details of the estimated manufacturing costs and proposed selling prices of these products are summarised in the table below:

<table>
<thead>
<tr>
<th>Potential customer</th>
<th>Notes</th>
<th>XYZ Mining</th>
<th>ABC Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product code</strong></td>
<td></td>
<td>M134</td>
<td>IN223</td>
</tr>
<tr>
<td>Proposed selling price per unit</td>
<td>1</td>
<td>R120,00</td>
<td>R80,00</td>
</tr>
<tr>
<td>Raw material costs per unit manufactured</td>
<td></td>
<td>R40,00</td>
<td>R15,00</td>
</tr>
<tr>
<td>Estimated production time per unit manufactured</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine hours</td>
<td></td>
<td>0,50</td>
<td>0,20</td>
</tr>
<tr>
<td>Direct labour hours</td>
<td>2</td>
<td>0,60</td>
<td>0,50</td>
</tr>
<tr>
<td>Number of units required annually by potential customer</td>
<td>3</td>
<td>35 000</td>
<td>60 000</td>
</tr>
<tr>
<td>Estimated variable manufacturing overheads per unit</td>
<td></td>
<td>R7,50</td>
<td>R8,50</td>
</tr>
<tr>
<td>Fixed manufacturing overheads per unit</td>
<td>4</td>
<td>R6,50</td>
<td>R2,60</td>
</tr>
</tbody>
</table>

**Notes**

1. XYZ Mining has indicated that its existing supplier charges R120 per unit. XYZ Mining is dissatisfied with this supplier as the order lead times are far too long (currently 30 days from order to delivery whereas XYZ Mining requires products to be delivered within 15 days of order). The M134 product is currently manufactured by Eficaz and sold to a variety of mining customers.

   Product IN223 would replace one of the existing products currently purchased and used by ABC Industrial. The existing product has some safety deficiencies and ABC Industrial has identified Eficaz as the appropriate partner to manufacture the new product (IN223), given its engineering expertise and manufacturing excellence. ABC Industrial has
patented the IN223 product design and will not make this product available to anyone else in South Africa. It is estimated that Eficaz will need to make a once-off investment of R308 180 in plant and machinery modifications to enable it to manufacture product IN223. ABC Industrial has offered to pay R50 000 of the plant and machinery modification costs. Eficaz plans to expense its share of the modification costs, as the company is uncertain as to how to allocate these costs to future units of IN223 manufactured.

2 The average direct labour cost for both the IN223 and M134 products is R60 per hour. Employees directly involved in manufacturing have indicated that they are prepared to work overtime, if necessary, provided they are paid 1.5 times their normal hourly rate.

3 XYZ Mining has committed to purchase 35 000 units of M134 in 2013. However, it cannot accurately predict volumes in future years. If commodity prices decline, XYZ Mining may have to scale back on mining operations in the short term until prices recover.

ABC Industrial is prepared to enter into a three-year contract with Eficaz for 60 000 units per annum to provide Eficaz with some assurance of recovering the initial investment in the supply arrangement. ABC Industrial estimates that annual order volumes of IN223 will increase by 10% per annum from 2014 for the foreseeable future.

4 Annual fixed manufacturing overheads are budgeted to be R1 300 000 in the 2013 financial year. These overheads are allocated to all products based on estimated machine hours to manufacture individual products, multiplied by an overhead recovery rate. The overhead recovery rate is determined as fixed manufacturing overheads divided by the total available machine hours. There are 100 000 machine hours available for the manufacture of products in 2013. Planned machine hours, excluding the potential M134 and IN223 opportunities, are 81 600 hours for the 2013 financial year.

Mr Oliveira is uncertain which opportunity Eficaz should pursue – should Eficaz manufacture M134 for XYZ Mining or IN223 for ABC Industrial? Eficaz has insufficient manufacturing capacity to pursue both opportunities and will for the next two years not have the financial resources to invest in further plant and machinery to expand capacity. It does, however, have sufficient resources to invest in modifying the existing plant and machinery to pursue the IN223 opportunity.

**Selling prices**

Eficaz has been grappling with the best way to determine selling prices for its products. Historically, it has estimated product manufacturing costs and added a standard mark up on costs to arrive at the selling price. Mr Oliveira is becoming increasingly concerned about this approach as it tends to result in the company favouring products which have higher manufacturing costs. He has heard that a more appropriate way of pricing products is to determine a standard recovery rate per machine hour and add this recovery to manufacturing costs to arrive at a selling price.
This alternate price determination strategy is illustrated below for an existing product (not M134 or IN223):

<table>
<thead>
<tr>
<th>Per unit</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material costs</td>
<td>60,00</td>
</tr>
<tr>
<td>Direct labour costs</td>
<td>30,00</td>
</tr>
<tr>
<td>Variable manufacturing overheads</td>
<td>10,00</td>
</tr>
<tr>
<td>Fixed manufacturing overheads</td>
<td>6,50</td>
</tr>
<tr>
<td>Total manufacturing cost per unit</td>
<td>106,50</td>
</tr>
<tr>
<td>Machine hour recovery (0.5 hours x R80.00 per hour)</td>
<td>40,00</td>
</tr>
<tr>
<td><strong>Selling price</strong></td>
<td><strong>146,50</strong></td>
</tr>
</tbody>
</table>