The management of Magnet Diversified Corporation is concerned about overhead cost allocations. The corporation has been using the plant-wide rate based on direct labor costs since it began operations. The CEO, Gogo McDermitt, has been hearing a lot about Activity Based Costing and is beginning to think the Corporation needs to adopt such a system. He has asked you, as a consultant, to evaluate overall overhead allocation system and prepare recommendations.

He tells you that a number of problems have arisen in the past few months. Several large, potentially profitable specialty jobs have been lost due to underbidding by the competition. There also seems to erosion in the market share of the generic sprockets as competitors are beginning to undercut the company’s current selling price. The costs to produce the generic sprockets also have risen in the past few years so the profit margin is really being squeezed.

In addition, some of the specialty jobs that have been won do not seem to be improving the bottom line as much as anticipated. In total, profits in the past three years have been gradually eroding. Since prime costs are fairly standard and stable for the industry, the CEO is beginning to suspect that the overhead costs are not being allocated in the proper manner and/or may be out of line with the competition.

The costs for the jobs using plantwide rate are as follows:

|  |
| --- |
| **Functional basis using plantwide rates** |
|  | Generic | Job 18 | Job 19 | Job 20 |
| DM |  357,000  |  7,000  |  42,000  |  28,000  |
| DL |  168,000  |  2,000  |  12,000  |  8,000  |
| OH |  840,000  |  10,000  |  60,000  |  40,000  |
| Total costs |  1,365,000  |  19,000  |  114,000  |  76,000  |
|  |  |  |  |  |
| **Unit produced** |  ***420,000***  |  ***5,000***  |  ***30,000***  |  ***20,000***  |

Assume the following four cost pools exist in the Magnet Diversified Corp.

|  |  |  |
| --- | --- | --- |
| Activity | Cost | Cost driver |
| Maintenance | $3,650,000  | 150,000 | Machine hours |
| Material handling | 879,000 | 350 | Material moves |
| Setups | 7,750,000 | 120 | Number of setups |
| Inspections | 2,721,000 | 12,500 | Inspection hours |

Using the jobs above, compute the total costs assigned using ABC to allocate the overhead. The following information provides the cost drivers amounts to be used.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|   | Generic | Job 18 | Job 19 | Job 20 |
| Machine hours | 9,000 | 100 | 600 | 400 |
| Material moves | 6 | 1 | 3 | 2 |
| Setups | 1 | 1 | 1 | 1 |
| Inspections hours | 750 | 60 | 120 | 80 |

**Required**

1. Prepare a schedule showing total cost per activity and the activity rates.
2. Prepare another schedule showing the total costs attached to each of the jobs above using the activity rates above to apply the overhead and the prime costs in the first schedule above.
3. Prepare a chart (graph) comparing the costs assigned for overhead for the two methods evaluated.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sales | Units produced | Per unit selling price | Sales | COGS | GP per job |
| Generic |  420,000  |  $5.00  |  $ 2,100,000  | $ 1,365,000  | $ 735,000  |
| Job 18 |  5,000  |  $ 6.25  |  31,250  |  19,000  |  12,250  |
| Job 19 |  30,000  |  $ 6.25  |  187,500  |  114,000  |  73,500  |
| Job 20 |  20,000  |  $ 6.25  |  125,000  |  76,000  |  49,000  |
|  |  |  | $ 2,443,750  |  $ 1,574,000  | $ 869,750  |
| Income statement |  |  |  |  |
| Sales |  $ 2,443,750  |  |  |  |  |
|  COGS  |  1,574,000  |  |  |  |  |
| Gross profit |  869,750  |  |  |  |  |
| Sell/Administrative expenses |  453,000  |  |  |  |  |
| Operating income |  $ 416,750  |  |  |  |  |
|  |  |  |  |  |  |

1. Compare the gross profit per job using ABC to the information presented above for the functional based method.
2. Prepare a second income statement using ABC cost information and the period expenses presented above in the given income statement.
3. Discuss, in memo format, the impact on the costs and bids using the plantwide rate and activity based costing. Include the recommendation for one of these two methods. Be sure to include proper rationale.