**Chapter-5**

**Cost Terms, Concepts and Classification**

**Cost:** Cost is a resource sacrificed or forgone to achieve a specific objective. A cost (such as direct materials or advertising) is usually measured as the monetary amount that must be paid to acquire goods or services. An actual cost is the cost incurred (a historical or past cost), as distinguished from a budgeted cost, which is a predicted or forecasted cost (a future cost). (C.T. Horngren)

Cost is “an exchange price, a foregoing, a sacrifice made to secure benefit”. (Matz, Usry)

**Cost Object:** Cost object is anything for which a measurement of costs is desired. A cost object is anything for which cost data are desired—including products, customers, jobs, and organizational subunits.

Examples of Cost Objects at BMW:

|  |  |
| --- | --- |
| Cost Object | Illustration |
| Product | BMW X 5 sports activity vehicle |
| Service | Dealer-support telephone hotline |
| Project | R&D project on DVD system enhancement |
| Customer | Herb Chambers Motors, a dealer that purchases a broad range of BMW vehicles |
| Activity | Setting up production machines |
| Department | Environmental, Health & Safety |

**Manufacturing Costs**

Most manufacturing companies separate manufacturing costs into 3 broad categories: direct materials, direct labor, and manufacturing overhead.

**(1)Direct Materials:** Direct materials are those materials that become an integral part of the finished product and whose costs can be conveniently traced to the finished product. This would include, for example, the seats that Airbus purchases from subcontractors to install in its commercial aircraft and the tiny electric motor Panasonic uses in its DVD players.

The materials that go into the final product are called raw materials. Actually, raw materials refer to any materials that are used in the final product; and the finished product of one company can become the raw materials of another company. For example, the plastics produced by Du Pont are a raw material used by Compaq Computer in its personal computers. Raw materials may include both direct and indirect materials.

**(2)Direct Labor:** Direct labor consists of labor costs that can be easily (i.e., physically and conveniently) traced to individual units of product. Direct labor is sometimes called touch labor because direct labor workers typically touch the product while it is being made. Examples of direct labor include assembly-line workers at Toyota, carpenters at the home builder Kaufman and Broad, and electricians who install equipment on aircraft at Bombardier Learjet.

**(3)Manufacturing Overhead:** Various names are used for manufacturing overhead, such as indirect manufacturing cost, factory overhead, and factory burden. All of these terms are synonyms for manufacturing overhead.

Manufacturing overhead includes all manufacturing costs except direct materials and direct labor. Only those costs associated with operating the factory are included in manufacturing overhead.

Manufacturing overhead includes items such as indirect materials; indirect labor; maintenance and repairs on production equipment; and heat and light, property taxes, depreciation, and insurance on manufacturing facilities. A company also incurs costs for heat and light, property taxes, insurance, depreciation, and so forth, associated with its selling and administrative functions, but these costs are not included as part of manufacturing overhead.

Labor costs that cannot be physically traced to particular products, or that can be traced only at great cost and inconvenience, are termed indirect labor. Just like indirect materials, indirect labor is treated as part of manufacturing overhead. Indirect labor includes the labor costs of janitors, supervisors, materials handlers, and night security guards. Although the efforts of these workers are essential, it would be either impractical or impossible to accurately trace their costs to specific units of product. Hence, such labor costs are treated as indirect labor.

**Nonmanufacturing Costs**

Nonmanufacturing costs are often divided into two categories:

**(1) Selling costs:** Selling costs include all costs that are incurred to secure customer orders and get the finished product to the customer. These costs are sometimes called order-getting and order-filling costs. Examples of selling costs include advertising, shipping, sales travel, sales commissions, sales salaries, and costs of finished goods warehouses.

**(2) Administrative costs:** Administrative costs include all costs associated with the general management of an organization rather than with manufacturing or selling. Examples of administrative costs include executive compensation, general accounting, secretarial, public relations, and similar costs involved in the overall, general administration of the organization as a whole.

Nonmanufacturing costs are also often called selling, general, and administrative (SG&A) costs or just selling and administrative costs.

**PRODUCT COST VS. PERIOD COST**

**Product Costs:** Costs that can be associated with products are called product cost. If a cost is incurred to acquire or make something that will eventually be sold, then the cost should be recognized as an expense only when the sale takes place—that is, when the benefit occurs. Such costs are called product costs.

**Period Costs:** Costs that can be associated with time periods are called period cost. Period costs are all the costs that are not product costs. All selling and administrative expenses are considered to be period costs. Advertising, rental costs of administrative offices, executive salaries, sales commissions, public relations, and other non-manufacturing costs are all examples of period costs. They will appear on the income statement as expenses in the period in which they are incurred.

**PRIME COST AND CONVERSION COST**

Two more cost categories are often used in discussions of manufacturing costs— prime cost and conversion cost.

**Prime cost:** It is the sum of direct materials cost and direct labor cost.

**Conversion cost:** It is the sum of direct labor cost and manufacturing overhead cost. The term conversion cost is used to describe direct labor and manufacturing overhead because these costs are incurred to convert materials into the finished product.

**COST CLASSIFICATIONS FOR PREDICTING COST BEHAVIOR**

Costs are often categorized as variable or fixed.

**Variable cost:** Variable cost is a cost that changes in proportion to production volume. A variable cost is a cost that varies, in total, in direct proportion to changes in the level of activity. The activity can be expressed in many ways, such as units produced, units sold, miles driven, beds occupied, lines of print, hours worked, and so forth. A good example of a variable cost is direct materials. Another example is wages of assembly line workers. The cost of direct materials used during a period will vary, in total, in direct proportion to the number of units that are produced.

Total variable cost increases and decreases in proportion to changes in the activity level.

Variable cost per unit remains constant.

**Fixed Cost:** Fixed cost is a cost that does not change when production volume changes. A fixed cost is a cost that remains constant, in total, regardless of changes in the level of activity. Fixed costs are not affected by changes in activity. Consequently, as the activity level rises and falls, total fixed costs remain constant unless influenced by some outside force, such as a price change.

Very few costs are completely fixed. Most will change if activity changes enough. When we say a cost is fixed, we mean it is fixed within some **relevant range**. The **relevant range** is the range of activity within which the assumptions about variable and fixed costs are valid.

Examples of fixed costs include straight-line depreciation, insurance, property taxes, rent, supervisory salaries, CEO salary, administrative salaries, and advertising.

Total fixed cost is not affected by changes in the activity level within the relevant range. Fixed cost per unit decreases as the activity level rises and increases as the activity level falls.

**Mixed Cost:** Mixed cost is a combination of a fixed and a variable cost. Cost is a linear function of production volume with a positive slope and intercept. Example: electricity bill.

*Y = a + bX*

*In this equation, Y = The total mixed cost*

*a = The total fixed cost*

*b* = The variable cost per unit of activity

*X = The level of activity*

Consider electricity bill, where a fixed charge (Tk. 150) is applicable and per unit price (Tk.5) is also paid for extra units.

*Y* = TK 150 + Tk.5*X*

**Problem:1** The following information has been taken from the accounting records of Klear-Seal Corporation for last year:

Selling expenses . . . . . . . . . . . . . . . . . . . . . . . . . . $140,000

Raw materials inventory, January 1 . . . . . . . . . . . . $90,000

Raw materials inventory, December 31 . . . . . . . . . $60,000

Utilities, factory . . . . . . . . . . . . . . . . . . . . . . . . . . . $36,000

Direct labor cost . . . . . . . . . . . . . . . . . . . . . . . . . . $150,000

Depreciation, factory . . . . . . . . . . . . . . . . . . . . . . . $162,000

Purchases of raw materials . . . . . . . . . . . . . . . . . . $750,000

Sales . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $2,500,000

Insurance, factory . . . . . . . . . . . . . . . . . . . . . . . . . $40,000

Supplies, factory . . . . . . . . . . . . . . . . . . . . . . . . . . $15,000

Administrative expenses . . . . . . . . . . . . . . . . . . . . $270,000

Indirect labor . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $300,000

Maintenance, factory . . . . . . . . . . . . . . . . . . . . . . . $87,000

Work in process inventory, January 1 . . . . . . . . . . $180,000

Work in process inventory, December 31 . . . . . . . $100,000

Finished goods inventory, January 1 . . . . . . . . . . . $260,000

Finished goods inventory, December 31 . . . . . . . . $210,000

Management wants these data organized in a better format so that financial statements can be prepared for the year.

*Required:*

1. Prepare a schedule of cost of goods sold.

2. Prepare an income statement.

**(1)**

**Klear-Seal Corporation**

**Schedule of Cost of Goods Sold**

For the Year Ended December 31

Direct materials:

Raw materials inventory, January 1 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $ 90,000

Add: Purchases of raw materials . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 750,000

Raw materials available for use. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 840,000

Deduct: Raw materials inventory, December 31 . . . . . . . . . . . . . . . . . . . . 60,000

Raw materials used in production . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $ 780,000

Direct labor . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 150,000

Manufacturing overhead:

Utilities, factory. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .36,000

Depreciation, factory . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 162,000

Insurance, factory . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 40,000

Supplies, factory . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .15,000

Indirect labor. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .300,000

Maintenance, factory. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . .87,000

Total manufacturing overhead cost . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 640,000

Total manufacturing cost. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1,570,000

Add: Work in process inventory, January 1 . . . . . . . . . . . . . . . . . . . . . . . . . . 180,000

1,750,000

Deduct: Work in process inventory, December 31 . . . . . . . . . . . . . . . . . . . . 100,000

Cost of goods manufactured . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $1,650,000

Add: Finished goods inventory, January 1 . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $ 260,000

Goods available for sale. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1,910,000

Deduct: Finished goods inventory, December 31 . . . . . . . . . . . . . . . . . . . . . . . . . . . . 210,000

Cost of goods sold. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $1,700,000

(2)

Klear-Seal Corporation

Income Statement

For the Year Ended December 31

Sales . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $2,500,000

Cost of goods sold (above) . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1,700,000

Gross margin . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 800,000

Selling and administrative expenses:

Selling expenses . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $140,000

Administrative expenses. . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 270,000 410,000

Net operating income . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . $390,000