CHAPTER-7
COST ACCOUNTING SYSTEM AND PRICING POLICY OF
ETHIOPIAN PRINTING COMPANIES

7.1 Costing system
7.2 Manufacturing cost
7.3 Cost center
7.4 Cost accumulation procedures
7.5 Pricing policy and system
7.6 Chapter summary
This chapter presents analysis of data collected through questionnaires, interviews, and documents reviewed as related to cost accounting system and pricing policy applied by medium and large scale printing companies in Ethiopia. The chapter begins with analyses of data on costing system. The current cost accounting practices for manufacturing cost, cost center, cost accumulation procedures adopted were all covered. Finally, the pricing policy and chapter summary were presented.

7.1 Costing system

As indicated in the literature, costing system is needed to accumulate the costs of goods manufactured. The nature of production activities of printing companies warrants the use of customer order costing system since products are heterogeneous and are based on customer specifications. The job order cost (customer order cost) system is used by all printing companies sampled in the study. It supports the study by Ngu (1997). In the study, he made the point to differentiate the various costing methods that can be used to come out with the product cost among which one was job costing. The study revealed that companies making one of a kind or special order products use job costing.

7.2 Manufacturing cost

Respondents were asked how the costs are classified, which costs are direct and indirect in calculating the cost of the product, how is the direct material cost charged and how materials are priced in their companies. The data is collected, classified and analyzed.

According to the literature, manufacturing cost of printing companies is commonly categorized as: direct material, direct labor and manufacturing overheads. The material costs for major products (books, magazines, newspaper, commercial papers,
administrative vouchers, stickers and note books) of the printing companies under study are composed of the cost of paper, ink, chemical, film, plate, staples and other supplies. Among these material costs, the cost of paper constitutes the direct material cost. The material cost for the product “Rubber Stamp” is composed of the cost of stamp handle, film, and chemicals. Stamp handle constitutes the direct material for the Rubber Stamp. In general, paper and stamp handle constitute the direct materials of printing companies under study since the costs of paper and stamp handle are easily and economically identified with the specific products of the printing companies. In all printing companies under study, the direct material cost is charged to jobs by taking the cost of the item as per the stock card valuation. Materials are priced using weighted average costing method. The direct material cost (cost of paper and stamp handle) has the largest portion of manufacturing cost of the printing companies. It supports the recommendation made by various researchers (Ersoy et al., 2006; Uyar, 2008; First research, 2009) that direct material cost has the largest portion in manufacturing costs, followed by manufacturing overhead and direct labor costs.

The labour costs of printing products consist of labour of machine operators, production managers, supervisors, quality controllers, Janitors, and maintenance workers. Among those labour costs, the labour of machine operators (computer, camera, montage, cord, GTO, platine, speed master, stitching, web operators, etc) constitutes the direct labor cost which can be traced to specific printing products in an economically feasible way.

The overhead cost is a summation of the cost of indirect materials (film, plate, ink, chemical, and other supplies), indirect labor (salaries of production manager, supervisors, quality controllers, janitors and maintenance), and all other manufacturing costs such as utility, depreciation, insurance etc, that cannot be charged
directly to specific printing products. It supports the study by Gorpipaitoon (1982) who found that the costs of direct materials and direct labour are charged to the job, but manufacturing overhead are accumulated and allocated to each job on the basis of direct labour cost or as a percentage of work finished.

7.3 Cost centers

As indicated in the literature by Garrison and Noreen (2003) and Hilton et al. (2008) a cost center is a defined area, machine, or person to whom direct and indirect costs are allocated. Respondents were asked the cost centers that exist in their production department. The survey result indicates that a variety of cost centers are observed in the printing companies under study. The cost centers for the majority of the printing companies (91 companies, 76%) are: computer, camera, printing, platin, and binding. The cost centers for the remaining companies (29 companies, 24%) are: computer, camera, cord, GTO, speed master, web, platin, cutter and stitching. Common cost centers observed in all printing companies under study are Computer, Camera, and Platin.

7.4 Cost accumulation procedures

Respondents were asked the source documents used for cost accumulation purposes, how direct material cost, direct labor cost and manufacturing overhead cost was entered in the job order cost sheets\textsuperscript{12}. The data is collected and analyzed.

The costs tracked and accumulated for product costing purposes are categorized as direct materials, direct labour, and manufacturing overheads. The direct material, 

\textsuperscript{12} The job cost sheet is a form prepared for each separate job that records the materials, labour and overheads costs charged to the job. The form varies according to the needs of the company.
direct labor and manufacturing overhead costs are accumulated for each job in a job cost sheet.

Among the respondents in the study, 43% of them responded that the source documents (forms) they use for cost accumulation purpose are: production order, job order cost sheet, material requisition, material issue voucher, and labor time tickets (job tickets and time cards). Production orders are authorized by production managers to carry out jobs according to specific details indicated in the production order. The remaining 57% of the respondents under study responded that job order cost sheet, material requisition, material issue voucher and labor time tickets as basic source documents for accumulation of production costs.

All the respondents stated that, the material requisition will use the job order number given to the job order cost sheet. The materials to be used must be identified as direct materials and indirect materials. After the requisitions are segregated into direct and indirect materials, the direct materials consumption will be entered in the material section of the job order cost sheet.

The direct labor cost information is obtained from labor summaries. All respondents determine the direct labor cost of a product (job order) by multiplying an established direct labor rate by the actual direct labor hours consumed by the job. There is, however, some variation in the way the direct labor rate is determined by the printing companies. The survey result indicates that 80 percent of the respondents under study responded that the variables considered in the determination of direct labor rate are: annual salary of operators, daily effective working hours, annual effective working days, and number of operators. The direct labor cost rate for a cost center is then determined as the annual salary of operators divided by the annual effective working
hours. The variables considered by the remaining 20 percent respondents in the
determination of direct labor rate are: daily-salary of operators and the number of
daily working hours. Accordingly, they compute the direct labor cost rate by dividing
the daily-salary of operators by the number of daily working hours.

The direct labor cost determined on the basis of the labor rate and the actual direct
labor consumed is then recorded in the job cost sheet. The direct labor rates differ
from cost center to cost center. The total direct labor cost for a product (job) is then
the sum of all the direct labor costs accumulated in the cost centers where the product
is processed.

Manufacturing overhead costs are difficult to trace to each job and are usually
predetermined. Manufacturing overhead is usually applied at the end of the job. Respondents were asked the different overhead rate prepared. The data is collected, classified and shown in the table for analysis.

**Table 7.1: The Types of Overheads Rate Prepared**

<table>
<thead>
<tr>
<th>Overhead rate</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing overhead rate</td>
<td>102</td>
<td>85</td>
</tr>
<tr>
<td>Manufacturing overhead rate, Selling and distribution expense rate, and General and administrative expense rate</td>
<td>18</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data

According to the survey result 15 percent of the printing companies under study
determine three rates: Manufacturing Overhead Rate, Selling and Distribution Expense Rate, and General and Administrative Expense Rate. The remaining 85 percent companies determine and use only manufacturing overhead rate.
Respondents were also asked the basis used for overhead cost allocations. The basis used for overhead cost allocation was investigated in one of the questions pertaining to manufacturing overhead. Responses were reported in Table 7.2.

**Table 7.2: Basis Used for Overhead Cost Allocation**

<table>
<thead>
<tr>
<th>Basis used</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct labor hours</td>
<td>91</td>
<td>76</td>
</tr>
<tr>
<td>Both direct labor and machine hours</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data

The survey result indicates that in setting the pre-determined manufacturing overhead rate, 24 percent of the printing companies use direct labor hour as a base for setting the predetermined rates for the labor intensive operations (computer and camera cost centers) and use machine hours as a base for the machine intensive operations (Cord, GTO, Speed master, Web, Platin, and Binding cost centers). The remaining 76 percent use direct labor hour as a base for setting the predetermined manufacturing overhead rates for all cost centers. These findings were supported by Wijewardena and Zoysa (1999) where direct labour hours and machine hours were used in that order for cost allocation. Direct labour hours was found in use by 68% of firms in Japan and 73% firms in Australia. The result is also consistent with the findings of previous studies conducted in U.K manufacturing firms by Drury et al. (1993).

The manufacturing overhead cost applied to jobs is captured (recorded) in the job cost sheet. Pre-determined overhead rates differ from cost center to cost center. The manufacturing overhead cost for a product (job) is then the sum of all the applied factory overhead costs accumulated in the cost centers where the product is processed.
General and administration expense rate is the expense of finance, planning and marketing research, administration and manager’s office. The administrative expense rate is developed according to the share of manufacturing cost as a whole. So that administration expense is charged to a job accordingly. Selling and distribution expense rate are expenses incurred under commercial department and developed based on the share of manufacturing cost so that it is charged to a job similarly.

The General and Administration Expense Rate and the Selling and Distribution Expense Rate are determined by relating the expenses to the total manufacturing costs as follows:

\[
\text{General and Administration Expense Rate} = \frac{\text{Actual General and Administration Expenses of the previous year}}{\text{Total Manufacturing Costs of the previous year}}
\]

\[
\text{Selling and Distribution Expense Rate} = \frac{\text{Actual Selling and Distribution Expense of the previous year}}{\text{Total Manufacturing Costs of the previous year}}
\]

### 7.5 Pricing policy and system

Survey respondents were asked the pricing policy of their companies. Regarding the pricing policy of printing companies, the survey result shows that all of the printing companies under study use cost-plus pricing method. Thus, the findings indicate that the pricing policy of printing companies under study has close relation with the product costs.
Interviews were made with the marketing managers about the different strategy of setting prices. Prices depend on product type, high prices in the case of security products and lower prices for other products. The volume of orders also influences prices. Large volumes lead to lower unit prices. Prices also reflect the quality level required by the customer. Quality level is measured in terms of machine speed; high quality requires low machine speed.

In setting selling prices for products, the companies consider each cost component: the material cost of a product, labor cost of a product, and overhead cost of a product as per the data provided by the Finance Department.

The direct material cost of a product is estimated based on the customer specification or sample. On the basis of the specifications or sample, the required list of materials and the respective quantities are derived by the Estimation Section. The estimated quantities of materials are multiplied by unit costs given by the Finance Department to determine the material cost.

The direct labor cost is charged to each product on a rating basis. The direct labor hours of the job order (product) in each cost center are estimated in advance jointly by the Commercial Department and Production department. To determine the total direct labor cost incurred on a product, each cost center direct labor cost is added to arrive at the total direct labor cost of a product. The total manufacturing overhead costs applied to a product is determined by summing up each cost center manufacturing overhead cost applied.

Thus, all the costs incurred when manufacturing a product are taken into account for pricing of a product. This full costing technique enables the company to ascertain with accuracy what it costs the entire organization to make a particular product. It relates to
the overall profitability of the company and for this reason using this full cost technique for the pricing decision is appropriate. It supports the study by (Govindarajan and Anthony, 1983; Shim and Sudit, 1994; Triest and Elshabet, 2007) who found that managers at a majority of firms rely on full cost information for pricing.

The approach used by the printing companies in setting the selling price is as follows:

\[
\begin{align*}
\text{Direct material cost} \\
+ \\
\text{Direct Labor cost} \\
+ \\
\text{Manufacturing overhead cost} \\
+ \\
\text{Selling and distribution expenses} \\
+ \\
\text{General and Administration expenses} \\
= \\
\text{Total Cost} \\
+ \\
\text{Profit margin} \\
+ \\
\text{VAT} \\
= \\
\text{Selling price}
\end{align*}
\]

7.6 Chapter Summary

This chapter presented descriptive, statistical results and interview data that were conducted for this research. The findings covered many issues related to the cost accounting system and pricing policy applied by Ethiopian printing companies. The
next chapter presents the extent of use of management accounting techniques, and the use of MAIS in managerial decision making.