

MANAGEMENT ACCOUNTING

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Introduction to Managerial Accounting

Learning Objectives

After reading this chapter, you will be able to understand

- the organizational expectations from accountants as scorekeepers, attention drawers, and problem solvers
- the professional skills and techniques used by accountants, such as Pacioli's double-entry bookkeeping system
- the links between financial accounting, cost accounting, and management accounting and also distinguish them
- the nature of financial accounting
- the main focus of cost accounting and cost audit regulations in India
- how management accounting helps managers in different segments of the value chain
- the position of the accountant in the organizational structure, the work activities they engage in, and the need for a two-way relationship between managers and accountants
- the attitudes towards accounting in various countries and as also accounting practices in developing countries
- the statutory regulations governing accounting and the need for moral and ethical guidelines for accountants

INTRODUCTION

In this chapter we shall explore the broad concepts of managerial accounting. The chapter is aimed at enabling persons from a non-financial background to look at accountants as their friends and helpers in achieving the strategic goals of the organization with the least cost and effort. The tag of 'management' is added on to 'accounting' in order to emphasize the role of accountants in the current times of being handmaids to managers.

Notwithstanding the rich spectrum of information which accounting systems have to offer to management, the extent of alienation of accounting from management in some quarters became starkly evident when Bernie Ebbers, the Chairman of WorldCom, one of the biggest companies of the world, pleaded ignorance of the mystique of accounting when accused of signing a blatantly fraudulent balance sheet, which brought on him a savage punishment of twenty five years of imprisonment.

Mystique in accounting

We need to tear open the mystique of accounting to avoid the tragedy of Bernie Ebbers of WorldCom.

Accounting can help in a wide range of activities—in micro-level management, providing signals in the marketplace for those who have to choose a place for their funds, and in public policy decision-making. There is an inadequate understanding of the potential of accounting in many parts of the world, including the United States of America where massive investments in maintaining accounting systems have co-existed with a poor use of the information available in these systems (Krumviede 2005). This chapter is an attempt to improve matters. In this chapter we shall also discuss how both financial and cost accounting are increasingly being used in managerial decisions, and the need for managers and accountants to work together in a relationship of mutual trust. Because of the extent of trust bestowed on accountants for managerial decisions, they need to strive to improve their competence, techniques, and professional ethical standards.

USERS OF ACCOUNTING SYSTEMS AND ACCOUNTING INFORMATION

The power of management accounting lies in its usefulness for a wide spectrum of stakeholders, as follows:

1. Owners, be they sole proprietors, partners, shareholders in private limited companies or public limited companies, can evaluate their managers. In public limited companies, they have the option of selling off their shares if they feel that things are going the wrong way.
2. Owners as the primary stakeholders get the information to improve corporate governance.
3. Managers make use of accounting information, which keeps them forewarned about their performance and enables them to take mid-course corrective measures and answer the owners.
4. Creditors get information which acts as a window to enable them to regulate their relationship with the organization. The law has gone to great lengths to prescribe the type of accounting information which would help them.
5. Potential investors have no means to take an a priori decision about an organization without the aid of credible information provided by the accounting system. Accounting standards developed all over the world, often supported by law, have held that the survival of capitalism is critically dependent upon trustworthy accounting systems.

The credibility of any information provided by a management accountant is dependent not only on the honesty and integrity of the accountant who is giving it, but also the accounting system that is in his/her command. These systems could be described as institutions that go towards building the social capital of a nation.

ROLES OF AN ACCOUNTANT

An accountant has several roles in an organization. Let us discuss some of these roles in detail.

Accountants as Attention Directors, Problem Solvers, and Scorekeepers

Three roles of accountants

Problem-solving, scorekeeping, and attention drawing are the three roles of accountants.

The work of accountants is beset with inherent tensions and conflicts because of the several roles played by them. There could be high stakes for a breach of trust. According to Horngren et al. (2003), organizations expect an accountant to be a problem solver, scorekeeper, and attention director.

Problem-solving skills would involve the framing of models for capturing the relevant issues and the use of accounting data analysis to help the management to solve the problems. Typically, if one had to choose between A and B—alternative investments—an accountant would estimate the related alternative streams of cash flows along with their probability of variations, and suggest which would be better for a given level of risk. To be a scorekeeper is to be the custodian of numbers indicating performance levels against benchmarks available in targeted plans. Thus, an accountant may draw up a variance analysis between budgeted profits and actual profits, analysing the reason for the variance, be it sales price, sales quantity, raw material usage and raw material prices, machine availability, or labour productivity. The attention director's role is to draw the attention of the management to the emerging trends in data, which may need attention for mid-term correction if the strategies have to be achieved. Thus, an accountant may point out that the sales returns are increasing and may affect future sales and profitability, or that delays in designing a new product could affect its markets and costs.

These three roles are inherent in staff functions in several functional disciplines, but they assume more importance in the case of accountants as they have reliable independent data with them that, in one way or the other, are usually also checked and authenticated by external authorities. These well-known functions of accountants have been fitted into a

sophisticated sociological framework by Yuri Ijiri (Hornigren et al. 2003). His framework also shows the sources of tension for accountants in the real world of organizations.

Ijiri's Accountee–Accounter–Accountant Model

The accountant, according to Ijiri, has two types of roles in organizations, one as the supplier of information for decision-making and a second for performance evaluation and accountability. He/she gives information to the manager within the organization, as also do different stakeholders, such as employees, shareholders, and creditors. Based on this information they have to take their own decisions. Ethical equity and fairness can be ensured in only that there is no asymmetry of information, and the same information is available to everyone correctly and fully. The accountant's role in this is critical and ethically invaluable.

In the accountability model, which is distinctly different from the information supplier model, the accountant's role is to provide information on the working of the accounter, who is accountable to the accountee. The terms *accounter* and *accountee* were coined by Ijiri. The accounter is the agent of the accountee, who is the principal. If we reflect on the basic concepts of the law of contract, the accountee may want information even if it is uncomfortable for the accounter. The accountant should function as a scorekeeper for the accountee. The accounter, on the other hand, would want to reveal as little information as possible that may reflect poorly on him/her. Control theory would show that such consequent tension can be ameliorated by trust and could be optimally balanced if some privacy and autonomy is given to the accounter, but not such total autonomy that the system may spin out of control due to what is known as 'opportunistic behaviour' on the part of the accounter.

The role of an accountant does not end with this negative connotation. He/she can also be a problem-solver for the accounter rather than being just a scorekeeper for the accountee. When the accountee is society at large and the accounter is the organization as a whole, the scope of accounting would cover social accounting, including environmental costs and benefits.

In all these roles, there could arise a conflict of interests between ethics of privacy and loyalty on the one hand and ethics of public disclosure and public good on the other. Caught in the crossfire, accountants may have to contemplate on revealing the whole truth. Power struggles could sometimes beleaguer accountants. In this difficult task, accountants have the peer support of their professional councils.

Tensions of accountants

Accountants report to accountees on the transactions of accounters, which may cause tension. Professional councils help to lay down codes which reduce tension.

In India, we have councils like the Institute of Chartered Accountants of India (ICAI) and the Institute of Cost and Works Accountants of India (ICWAI). Similar professional councils exist in other countries of the world. Due to historical reasons, Indian institutions have greater fraternal association with the Anglo-Saxon institutions, namely those in the British Commonwealth and the United States of America. These councils have built codes of conduct which attempt to protect accountants, accounters, and accountees from the adverse effects of the conflict of ethics.

A brief description of the codes is given in Annexure 1.1. The case studies at the end of the chapter have some examples of ethical dilemmas of accountants. We shall deal with these issues in greater detail later in the chapter.

PACIOLI'S DOUBLE-ENTRY BOOKKEEPING AND ACCOUNTING SYSTEMS

Pacioli's double entry bookkeeping

It is one of the greatest inventions of mankind—what we owe will always be equal to what we own and every change in what we owe or own will have a dual effect of changing what we owe and own.

The skills and techniques possessed by present-day accountants are the proud heritage of over three thousand years. Indian practices were ingenious and were often regulated by the state (Sekhar 2002). One of the most brilliant inventions of the world was the system of double-entry bookkeeping described by Luca Pacioli, a product of the Renaissance in 15th century Italy (Tinius and White 1990). Computerization has not rendered this basic system suggested by Pacioli obsolete, as it is ideally fitted to the managerial needs of business units involved in economic activity.

We shall now describe the essence of this system and discuss how it supports the entire gamut of financial accounting, cost accounting, and management accounting. We shall deal with the detailed documentation required for this and the important signals available from one of the standard outputs of accounting systems, namely, the balance sheet, in Chapter 2.

Double-entry booking is built on the conception that every transaction in an organization would result in the increase or decrease in what it owns or what it owes, with an equivalent and corresponding increase or decrease in what it owes or what it owns. This duality will ensure that what is owed is equal to what it owns. The reader may note that we have not used the words 'debit' or 'credit', which are, to many, the soul of accounting. They are not. The words 'debit' and 'credit' are, at best, shorthand descriptions that, for the present, we are relegating to technical texts to keep our minds clear of jargon.

The essence of double-entry bookkeeping could be illustrated as follows:

The owner brings in cash of ₹1000 to the organization. What it owes to the owner is increased by ₹1000 and what it owns in cash is increased by ₹1000. Note that in this process we have established what is known as the 'entity' concept in accounting. The entity is different from the owner. The organization buys in cash material worth ₹500 and uses it in production. What it owns in cash is reduced by ₹500 and what it owns in terms of product value increases by ₹500. The organization employs labour and pays ₹500 in cash. What it owns in cash is further reduced by ₹500 and what the organization owns in terms of the value of the cost of production increases by ₹500. The value stands now at a figure of ₹1000 (material consumed ₹500 + labour ₹500). This underlines the money and cost concept of valuation in the balance sheet. The organization sells the product for cash of ₹1500. What it owns in value of product decreases by ₹1000 but what it owns in cash increases by ₹1500. At this stage what it owns (₹1500) in cash is more than what it owes to the owner (₹1000). This is profit which the organization owes as dividend to the owner. This again re-emphasizes the property rights and legal relationship between the owner and the entity.

Thus, when the balance sheet is made on that day of what the organization owns and owes, it will show cash of ₹1500 as 'owned', ₹1000 as 'owed' to the owner as the initial investment, and ₹500 as 'owed' to the owner as dividend. The organization is obliged by the structure of property rights in that it will have to pay the profits to the owner or re-invest it in business as if it has been paid by the owner again.

The cash owned is known as an asset and what the organization owes is known as liability. It may be summarized that in a balance sheet, assets always equal liability, and therefore, a balance sheet balances.

It may be noted that the accounts aggregate only transactions which change what we own and what we owe under different categories. Thus, Pacioli's great invention has enabled the easy emergence of the balance sheet at the end of a series of transactions. This method is also used by modern computers to aggregate the consequences of a series of discrete transactions. We have also found that the cost of production is also a byproduct of the process.

If, at an intermediary stage, the cost of production is too high with respect to quantities produced or if the total production is good but the percentage of good quality units is questionable, the organization will typically get a signal from the management accountant. This process may

Why balance sheet balances

Since every transaction of increase or decrease of what we own and owe reduces or increases what we own or owe correspondingly, and if in the net what we own is more than what we owe, the difference is profit and is owed to the owner. Reverse is the case if what we owe is more than what we own.

require edifice documentation and procedures, which is cost-effective and avoids drudgery. These will be described in Chapter 2.

ESSENCE OF FINANCIAL ACCOUNTING

In the previous section we discussed how Pacioli's double-entry bookkeeping is the fountainhead of all accounting. Let us now understand that part of accounting which is labelled as *financial accounting*. The most important output of the system of financial accounting is the *balance sheet* and *profit and loss account* to be made available to the stakeholders, the main ones being the owners and shareholders.

In a somewhat simplified understanding, financial accounting deals with all the processes which enable the organization to present to external stakeholders of an organization, the balance sheet on specified dates and an exploratory statement of changes in the balance sheet from the previous date to the next. The latter is basically the profit and loss account, which shows the profit or loss generated in the intermediate period; as explained earlier, this shows the accretion or decrement of what the organization owes to the owner.

True and fair balance sheet

The primary concern of financial accounting is making sure the balance sheet is true and fair.

How much detail should be provided in the balance sheet and the profit and loss account and what is the criterion for a true and fair view of the organization? In deciding this, the law takes into account a balance between privacy and autonomy of the organization and the need for public disclosures in sufficient detail so that stakeholders would be enabled to make their choices; vendors, to sell goods to them; shareholders, to invest or divest; and depositors and lenders, to give deposits or lend to the organization. These are governed by various enactments. The primary law is the Companies Acts of different countries. In addition to the company law, councils of professional accountants have evolved a set of norms which balance the need for privacy and public disclosure. These laws may generally follow a similar pattern, but could be different in significant ways. Thus, the generally accepted accounting principles (GAAP) of the US requires segment profits to be disclosed, whereas the Indian accounting standards (AS) till recently did not require this (<http://www.icai.org>). Even now only companies listed in the stock exchange, banks, financial institutions, insurance companies, industrial concerns whose turnover is over ₹50 crore, and commercial concerns with more than ₹10 crore have to show the segment information.

Judgement estimates

Financial accounts are not only factual but also use judgemental estimates, the basis for which must be disclosed. These could turn out to be cover-ups for frauds as in the cases of Enron and WorldCom.

The true and fair view of the balance sheet is not merely an accurate aggregation of the transactions of the organization. It also involves

considerable exercise in judgement, which goes much beyond a mere observation of facts. How much of the monies that the organization owns in the form of dues from others is truly recoverable? When do we recognize a sale? Should it be only after cash is received for the sale or when the goods are handed over to the purchaser, as required in the contract? How to value the closing stocks? Are they saleable, and, if so, at what prices? Is our estimation of what we owe correct? Are the claims of others on you justified? When does an amount become payable to the outside claimant? These involve some judgement on the part of the accountant as well as the accouter (these terms have been defined earlier in the chapter). In all these issues, explicit disclosure is an important consideration. The legal pronouncements and norms of professional bodies also provide guidelines on how to take a fair decision. However, because of the existence of many subjective features and grey areas in accounting, great scams and frauds were perpetrated by global giants such as Enron and WorldCom, in which big audit firms such as Arthur Anderson were also said to be involved.

Financial accounts are audited by accountants whose qualifications are prescribed in law. In India, they are usually chartered accountants who are qualified under the certifying procedure of the Institute of Chartered Accountants of India (ICAI)—a body constituted under an Act of the parliament. Every country has similar arrangements. This entire scheme of making a balance sheet and profit and loss account to provide a true and fair picture of an organization is often considered, rightly or wrongly, as the crucial engine of the capitalist system of free markets, and a primary prerequisite for development (May and Sundem 1995).

COST ACCOUNTING

Use of resource in process and products

The main focus in cost accounting is the measurement of used resources in products and services. It is a handmaid to financial accounts in inventory valuation.

If financial accounting is focused on the production of a true and fair balance sheet, *cost accounting* focuses on the use of resources of an organization in its products and services. Its strength is enhanced in its being reconcilable with the financial accounts. Its credibility is established in this process. Since no balance sheet can be prepared without valuing inventories, cost accounting is essential for this process. In fact, the earliest costing exercises in this century were more generally addressed to this issue (Todman 1922). Later in the 1930s and 40s, cost accounting was important for defence purchases as they bought from monopoly producers and prices had to be negotiated.

Costing in defence
 Mohammed Shoaib of the Indian Defence Accounts Service is the father of Indian costing. He used it for the costing of defence purchases.

One of the founders of Indian costing was Muhammed Shoaib, a brilliant officer of the Indian Defence Accounts Service (IDAS), who later became the finance minister of Pakistan. Pakistan issued a stamp in June 2000 to honour his role in the costing movement. Cost accounting analysis was used in the fixation of the scale of reimbursements in medical insurance. Public pricing policies rely on cost analysis. We shall use several examples in later chapters showing these applications of cost accounting. Table 1.1 points out the differences between financial, management, and cost accounting.

Table 1.1 Difference between financial accounting, management accounting, and cost accounting

Financial accounting	Management accounting	Cost accounting
Reports to those outside the organization—owners, lenders, tax authorities, and regulators.	Reports to those inside the organization for planning, directing and motivating, controlling, and performance evaluation.	Reports to those inside the organization and regulatory authorities.
Emphasis is on summaries of financial consequences of past activities.	Emphasis is on decisions affecting the future.	Emphasis is on product costing and activity-based costing.
Objectivity and verifiability of data are emphasized.	Relevance of items relating to decision-making is emphasized.	Assists in formulation and execution of budgets and standards.
Precision of information is required.	Timeliness of information is required.	To be defined according to purpose.
Only summarized data for the entire organization is prepared.	Detailed segment reports about departments, products, customers, and employees are prepared.	Emphasis on profit or loss of each product, job, service, or division.
Must follow Generally Accepted Accounting Principles (GAAP).	Need not follow Generally Accepted Accounting Principles (GAAP).	Follows rules set by the Cost Accounting Standards Board (CASB).
Mandatory for external reports.	Not mandatory.	Not mandatory.

COST AUDIT REGULATIONS IN INDIA

Statutory cost audit in India

Unique in India are the powers of Central Government to prescribe cost accounting procedures and audit by cost accountants. Forty seven industries are currently in the list.

Innumerable examples of the use of cost accounting data for external applications can be provided. The most important of these is a very unique piece of legislation in the Indian Companies Act (Section 233 B and Section 209), which empowers the Central Government to prescribe the cost accounting record rules for industries which are of public importance. Cost accountants could be appointed to examine them and give them a report. Forty-seven industries are now included in this list. They have been listed in Annexure 1.2.

The industries in this list could be typically of the following types:

1. Products which are of wide consumption and their prices hit hard on the standard of living of vulnerable sections of the population.
2. Products in which there are dominant producers who may tend to have exploitative prices.
3. Products which have a criticality in ensuring the development of certain sections of the population, say, rural populations.
4. Products whose production is regulated by the government and it may be important that those who have been permitted to produce do not misuse the favours given to them.

The list has been conditioned by the prevalent public policy postures. Since the postures have been shifting, we still have the residuals of the obsolete policies left in the listing. India is now veering more towards freer markets and less of government interference in industry and this necessitates the de-listing of certain industries. Threatened by the possibility of public cost audit, some of these industries have often attempted to get their products de-listed. This game of power politics shows the strategic importance of this legislation and the deference required from the related managers to the social purposes of cost accounting in India.

Public Regulations to Control Cost Accountants

The scope of cost accounting in problem-solving, scorekeeping, and attention drawing in organizations is wide and all pervasive. Notwithstanding the wide-ranging applications described earlier in the discussion of the external uses of cost accounting, the greater power of cost accounting is in this internal role. Just as the ICAI certifies chartered accountants, the ICWAI is the professional council having the powers for certifying the professional competence of cost accountants. Most other countries of the

world have similar professional bodies to regulate the work of cost accountants such as the Institute of Management Accountants (IMA) of the US.

MANAGEMENT ACCOUNTING

Management accounting

It integrates financial and non-financial data to help in all-round improvement of performance and achievement of strategic goals.

On tracing the history of financial accounting and cost accounting, we would notice that the scope of these subjects would seamlessly and imperceptibly move towards their greater use in managerial non-financial decisions. All such decisions would surely have financial repercussions in the long run. However, these will not be obvious in the short term.

Thus, using correlated training costs and effectiveness, customer servicing time and customer satisfaction, customer sales and customer profitability is a typical application of management accounting. As the Institute of Management Accounting of the US defines it, management accounting is *a value adding continuous process of planning, designing, measuring, and operating both non-financial information systems and financial information systems that guides management action, motivates behaviour, and supports and creates the cultural values necessary to achieve an organization's strategic, tactical, and operating objectives.*

Let us now consider two examples of extensions, one from financial accounting and the other from cost accounting, which show their transitions to management accounting (Examples 1.1 and 1.2).

The examples discussed indicate how much accountants use budgeting and capital investment appraisals in conjunction with report cards for helping the management to achieve strategic objectives. These report cards are known as *balanced scorecards*. The jurisdiction of accountants extend across the value chain of the organization, as shown in Fig. 1.1.

In every one of these segments of the value chain, management accountants help in identifying the key controllable factors and success factors, cost and efficiency, quality, time management, innovation, and benchmarking. They use standard costing and variance analysis to help the management to correct themselves for achieving operational and strategic targets. These functions are briefly described as under:

Research and Development: Keeping a tag on the project cost and achievement of milestones, warning of the likelihood of future excess over project cost based on PERT cost analysis, choice of projects based on likely internal rate of return.

Tools to aid management accountants

Budgeting, balanced scorecards, standard costing variance analysis, cash flow analysis, and so on are the tools to help management accountants.

Example 1.1 Rashmi Detergents

The published financial results of three detergent companies were studied by Raghu, the financial accountant of Rashmi Detergents, and he found that as against debtor to sales showing 1 to 1.2 months of sales in all other companies, Rashmi Detergents had four months. Raghu drew the attention of the management to this gap between Rashmi Detergents' data and the industry norm. Rashmi Detergents decided that it would bring it down to the industry average. This was built into the month's budget. This can be labelled as planning. Raghu ensured that the invoices were promptly raised on the customers. He also checked the daily balance of customer outstanding and sent reminders to the customers who were exceeding the permitted credit period, now of one month. This activity can be labelled as scorekeeping. When Raghu spoke to a few employees of Rashmi Detergents, he came to know that in many cases, the packaging got broken in transit and the sale was returned. This was a problem that resulted in large outstanding debts. He solved the problem by suggesting inspection before secondary packing. This activity can be labelled as problem solving. The entire exercise can be presented as in Table 1.2.

Table 1.2 Management control from financial accounts at Rashmi Detergents

Observation/Setting up system	Action
Attention drawn to high debtor balance (industry average of 1–1.2 months sales)	Budgeting and planning for bringing down to one month balance (planning)
Set up documents to watch debtor balance – scorekeeping system against budget	Prompt invoicing and reminders for debtors exceeding credit limit (scorekeeping)
Ascertaining that the delay in payment is due to packaging damages	Inspecting primary packing before secondary packing is done (problem solving)

Design: The goals in this department being of shorter lead time and uncertainties being less, short-period reports would be useful on lines similar to research and development. More importantly, the design department is the critical part of target costing and cost reduction. Management accountants would, therefore, develop data to enable one to judge the use of the new design for achieving the goals. Significantly, the data would not be available off the shelf from the historical cost accounting data of an organization, and would have to be built up.

Production: This typically includes evaluating asset acquisition proposals. Other operational processes are evaluated against physical and financial parameters and in relation to the responsibilities specified by the organization.

Example 1.2 Elixir Engineering—Electric Grinder Divisions

Jyoti, the cost accountant who was preparing the product-wise profitability of Elixir Engineering, found that the price of the competitor's product was 20 per cent higher than theirs, but Elixir's market share was much lower. She found that the sales returns were high at 15 per cent, and expenses against warranty/guarantee were high at 5 per cent of the cost of sales. She found that the product was running at a loss. She analysed why this was happening and found the reasons to be low volumes (therefore, high fixed costs per unit) and low prices. Elixir decided to improve the quality of its product; increase its prices; and sell it aggressively. Budgets were set accordingly. Amounts of warranty expenses were budgeted as 2 per cent of sales, sales returns as 5 per cent of sales, and ceilings for customer complaints as 5 per cent of the number of sales. This also meant an increase in the cost of inspection by 5 per cent and design costs by 5 per cent. Jyoti advised that if all this were done, the electric grinders would give handsome profits. Therefore, all these steps were budgeted and watched. After these were carried out, the salespersons realized that the grinder could improve in sales if one attachment for grinding hard substances such as pepper were added to it. This attachment was thus provided so as to widen the market segment. However, it involved some extra capital investment. Jyoti worked out the profitability implications and found that the cash flows would increase considerably and the internal rate of return could be very high. The scheme is presented in Table 1.3.

Table 1.3 Management control flowing from cost accounting for electric grinders

Observation/Setting up system	Action
Product profitability low. Prices are lower than competition. Sales returns high. Warranty expenses high. Volumes low and high fixed cost/unit.	Increasing prices, reducing returns, reducing warranty expenses, pushing product, increasing inspection costs and design costs, setting budgets accordingly (planning)
Set up documentation to watch performance against budget.	Watching performance (scorekeeping)
Sales force suggested the widening of market segments by providing special attachment. This seemed to give high return on further investment.	Changing strategy based on cost analysis (problem solving)

Marketing: Assessing advertisement expenses and other marketing efforts in trade shows, TV, and other media.

Distribution: Assessing channel costs and channel effectiveness, correlating with customer satisfaction.

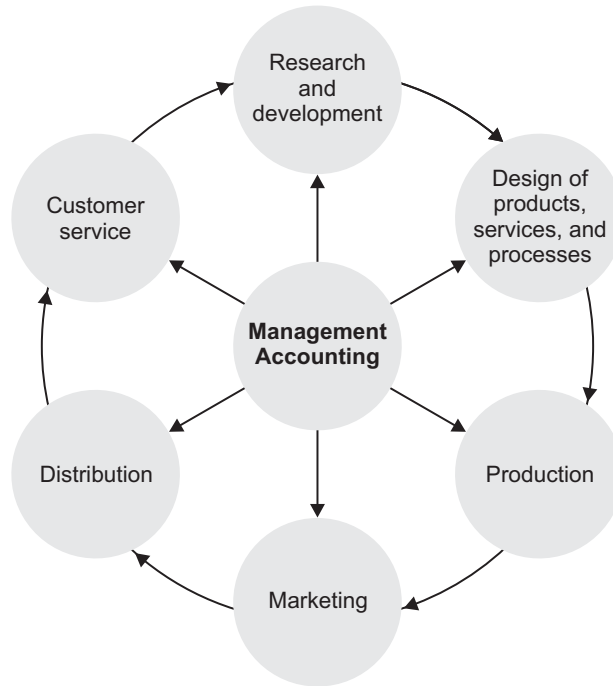


Fig. 1.1 Helping managers in the different segments of the value chain

Customer service: Computing customer costs and assessing customer profitability, special volume customer discounts, special extra prices for small orders, and so on.

From a review of the literature on management accounting, one may conclude the following:

1. Management accounting practices can be divided between those which involve decision making, and those which focus on evaluation and control by identification, measurement accumulation, analysis, interpretation, and communication.
2. The second stream of functions has sometimes been used as umbrella expressions to cover several detailed activities such as tax administration, protection of assets, or reports to the government. These have always been part of the traditional functions of accountants, which have been variously described as internal audit, tax management, etc. There is a general tendency to treat management accounting as an omnibus word which covers all the good things that could be done to an organization because it feels grand to call it all management accounting. These topics have not been dealt with in this book as it focuses on strategic costs. These topics are usually covered in detailed texts of management control systems.

THE ACCOUNTANT IN THE ORGANIZATIONAL STRUCTURE

Organizational structure

Reporting relationships of accountants are sometimes to the divisional management and sometimes to the central controller.

Like all other functional disciplines, accountants could be spread over several levels of hierarchy, but the more significant aspect of accountants and the organizational structure is the reporting relationship between the divisional accountants and the divisional manager. Two alternative patterns are followed, which are shown in Fig. 1.2.

Pattern 1: The divisional accountant reports primarily to the controller, while he has a dotted working relationship with the divisional manager. This could cause immense tension with the divisional manager and emphasize the role of an accountant as a keeper of scorecards.

Pattern 2: The divisional accountant reports primarily to the divisional manager, while she has a dotted working relationship with the controller. This pattern of reporting relationships emphasizes the problem-solving and attention-drawing roles of the accountant.

A Day in the Life of a Management Accountant

Some interesting data are available on how management accountants spend their time now and how they are likely to spend their time in the coming decades (Horngren 2003). The major work activities on which they spend their time are indicated in Exhibit 1.1.

In terms of importance, management accountants indicate the following work aspects:

- oral and written communication
- ability to work as a team
- solid understanding of accounting

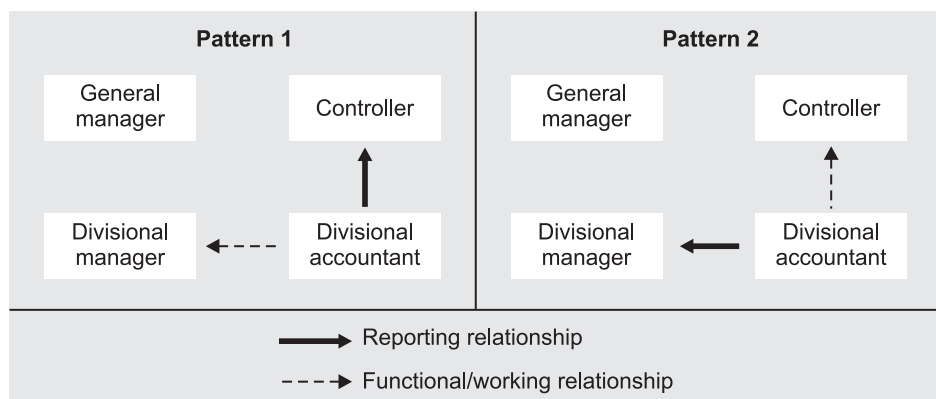


Fig. 1.2 Patterns of reporting relationships of accountants

18 ♦ Management Accounting

Exhibit 1.1 Major work activities on which management accountants spend their time

• Accounting systems and financial reporting 62%	• Computer systems operation 21%
• Managing accounting and finance function 42%	• Process improvement 20%
• Internal consulting 42%	• Performance evaluation 17%
• Short-term budgeting 37%	• Tax compliance 14%
• Long-term strategic planning 25%	• Accounting Policy 13%
• Financial and economic analysis 24%	• Consolidations 11%

- understanding how business functions
- computer skills

Management accountants also predict future trends, as shown in Table 1.4.

Table 1.4 Decreasing and increasing trends of preoccupation among management accountants

Decreasing trends	Increasing trends
Accounting systems and financial reporting	Internal consulting
Consolidations	Long-term strategic planning
Managing accounting and finance function	Computer systems operation
Accounting policy	Process improvement
Short-term budgeting	Performing financial and economic analysis
Project accounting	

ATTITUDES TOWARDS ACCOUNTING SYSTEMS

In this section, we shall discuss the need for managers to have a positive attitude towards accountants and accounting systems, attitudes towards accounting in different nations, and management accounting in developing countries.

Managers and Accounting Systems

It goes without saying that the primary role of managers is to be active innovators, whether they be in the first line or as chief executives. Their decisions and operational methods would be much better informed if the enormous information system is available to them and accounting personnel are also available at their service for interpreting this information. This two-way relationship between the manager and the accountant calls for mutual trust and not subservience of one to the other.

However, there has been extensive ambivalence in this relationship. Thus, an intuitive understanding has resulted in massive investment of resources in accounting systems, but contrarily, its utilization has often been inadequate (Krumviede 2005). There could be three reasons for this situation. First, the manager's fear of the complexity of accounting data and information, which needs to be dispelled by education and continued counselling at the individual level as well as the organizational level. The second reason may be the secretiveness of accountants in sharing their knowledge; they have to learn to be transparent and lucid. The third unfortunate reason could be the lack of ethics on the part of managers—there can be no quick remedies for this, but a major effort of organizational transformation supported by punitive measures, as typically contained in the Sarbanes–Oxley Act of the US, which savagely punishes wrong statements in the published accounts, could be helpful.

Comparative Survey of National Attitudes towards Accounting

We have shown that Indian accounting practices have generally followed from Anglo-Saxon practices, in particular those of institutions in the UK. The US practices tend to be compliance-oriented, which means that they lay down rule, which are to be followed. If they are not, there would be punishment. The impact on judgements is less and actors are, therefore, free to choose their action and decisions with implicit faith in the system to be supportive of free market capitalism. This discipline enforced by an external legal force often makes managers in the US view accounting systems as impositions. The UK has a tradition of a commonly shared social concern and expects managers to share in this concern.

The German and Japanese economies are strongly driven by financial institutions working in collaboration with major industrial groups (Rajan and Zingales 2000). They are very strongly inclined to taking management accounting seriously. Thus, the cost accounting systems followed in Germany are elaborate and complicated, and the German term for it is a tongue twister—*grenzplankostenrechnung*—known simply as GPK in other parts of the world (Clinton and Webber 2004). Significantly, German managers have taken the complexities of these systems in their stride and have not got tired out. The systems are entirely computerized in enterprise resource planning (ERP) systems such as PROGRESS, SAP, etc. This has taken the drudgery out of the system and enables them to handle complexity with ease.

The Japanese system, with no trace of individualism as in Germany, has a paternalistic and educative attitude towards its managers and has

management accounting methods which are strongly conditioned by their impact on behaviour rather than their absolute logic (Hiromoto 1988).

Management Accounting in Developing Countries

Hopper, Wickramasinghe, Tsamenyi, and Uddin have done extensive fieldwork in the state of management accounting in developing countries such as India, Bangladesh, Srilanka, and Ghana (Hopper et al. 2003). They work on the implicit understanding that the implementation of the Anglo-Saxon accounting practices and standards would undoubtedly be beneficial to developing countries—a hypothesis which has not been demonstrated to be true (Larson and Kenny 1995).

Be that as it may, Hopper et al. show that standard management accounting practices developed in advanced countries are used in developing countries, but their extensive use is inhibited due to a few factors:

- A large part of the industry is in family-owned business where compulsions are in different directions.
- The cost benefits available in manipulating markets and state regulators are more rewarding than genuine cost control, cost reduction, and better resource allocation decisions.
- Many small activities have operated quite successfully with indigenously developed accounting and control systems, typically the self-help groups of Bangladesh.
- A large part of the activities in developing countries are rural and agricultural in nature, whereas much of western management accounting is based on manufacturing.

In their appreciation of the situation in developing countries, Hopper et al. have missed out the recent boom in IT and pharmaceutical industries in India. Due to these newer developments, we would undoubtedly witness major convergence in management accounting practices in the world in future.

STATUTORY CONTROLS ON ACCOUNTING

We have alluded to the existence of statutory regulations governing both financial accounting and cost accounting, the most fundamental being the certification of professional competence. We shall now discuss some more legal controls on accounting.

In financial accounting, the Indian Companies Act in its Schedule VI prescribes the details which must be shown, for instance, the profit and

loss account must show the opening stock, purchases and closing stocks, raw material consumed, spare parts consumed, sales of each class of goods, brokerage and discount in sales, bad debts, repairs, miscellaneous income, depreciation on categories of assets as specified, categories of working capital as specified, share capital, and so on. Similar are the provisions all over the world.

As mentioned earlier, the statutory support for cost accountants in India is unique in so far as it provides for the cost audit of firms. Both financial accountants and cost accountants are also regulated by the directions issued by their respective professional councils. These directions are issued after detailed consultation with industry and the professional members. Networking with other professional councils all over the world brings in some standardization. It must be noted that unlike the standardization imposed by the Indian state from time immemorial, the current modern effort is to bring it all about by mutual consultation and participatory processes.

Moral and Ethical Imperative of Accountants

Ethics of accountants

Accountants have special need to be ethical as their roles are fiduciary.

The professional councils of financial accountants and cost and management accountants all over the world have, in addition to a set of instructions on the content of their professional work, laid down guidelines for moral and ethical behaviour. The need for ethical behaviour is very high in this profession as the nature of work is highly intricate and not easily understandable by the users of their outputs. Society, therefore, has very high expectations of honesty, trustworthiness, and professional competence from the accountants. Accountants therefore have to be above suspicion.

A summary of the codes of conduct followed by accountants is provided in Annexure 1.1. Exhibit 1.2 shows a typical process by which

Exhibit 1.2 Typical process of ethical negotiation of a management accountant

If the policies of an organization do not resolve ethical conflict, practitioners should consider the following:

- The problem should be discussed with the immediate superior except when it appears that the superior is involved, in which case the problem should be presented to the next higher managerial level. If the next superior level is the chief executive, it may be submitted for acceptable review to the audit committee or its equivalent.
- Relevant ethical issues should be clarified by confidential discussion with objective advisor.
- One's attorney should be consulted regarding legal obligations.
- If the ethical conflict still exists after exhausting all levels, then one can resign and submit an informative memorandum to an appropriate representative of the organization. After resignation, it may also be appropriate to notify other parties.

Source: *Management Accounting*, vol. LXXXIX, no. 1.

an ethical management accountant could get his/her ethical bearings in the organization.

COST OF ACCOUNTING

Cost of accounting
It should be
consciously kept low.

As in any other managerial activity, the cost of accounting should be an important consideration. However, we often lose sight of this. There is, therefore, always a continuous dialogue between the prescribing authorities in accounting, whether it be the government or professional councils, and the industry, which has to implement the prescription. Even in internal prescriptions, this aspect may be overlooked, in spite of the fact that computers have made the task easier. One may roughly say that the cost of accounting should not generally exceed one per cent of the total costs of the product or service.

SUMMARY

Accountants are expected to be trusted problem solvers, scorekeepers, and attention drawers. They keep accounts for the accouter, who is accountable to the accountees. This makes them prone to tension-ridden power struggles. The law and professional councils lay down codes of conduct which can help to steer them through difficult dilemmas. Accountants have the benefit of an ancient lineage of skills. Double-entry bookkeeping is one such system and can be considered one of the greatest innovations of the human mind. It is the foundation of the current computerized systems of accounting which are engaged in aggregating the results of transactions.

The main concern in financial accounting is true and fair balance sheets, whereas cost accountants specialize in tracing resources to products and processes. Both have to use the data in their possession for the achievement of the strategic and operational goals and objectives of an organization. This is termed as management accounting.

Budgeting, balanced scorecards, and standard costing are some of the tools used by accountants. The law has laid down several directions for financial accountants and cost accountants regarding the structure and details of their accounts. India has a unique legal provision for the cost audit of firms. Professional councils of accountants also have codes of conduct as they are only too aware that the profession is esoteric, and trustworthiness is the most important quality expected of accountants. One must consciously attempt to restrict the cost of accounting to reasonable levels.

KEY POINTS

- Management accounting is a value adding continuous process of planning, designing, measuring, and operating both financial and non-financial information systems, which guides management action, motivates behaviour, and supports and creates the cultural values necessary to achieve an organization's strategic, tactical, and operating objectives.
 - Scorekeeping is the task of indicating performance levels against benchmarks available in targeted plans.
 - Attention drawing is a task done by an accountant to tell the accouter that mid-course correction may be called for.
 - Problem solving is a task done by an accountant in identifying problems and suggesting solutions.
 - Codes of conduct of accountants are norms of behaviour prescribed by professional councils of accountants.
 - Double-entry bookkeeping is based on the principle that every transaction in an organization will increase or decrease what it owns and owes with a corresponding decrease or increase in what it owns and what it owes in a different item of account. This basic concept is used both in manual and computerized accounting systems.
 - The business entity concept distinguishes the owner from the business entity and presumes that the profit of a business entity is its liability, which is owed to the owner, and, conversely, loss is to be made good by the owner to the business entity, thus balancing the balance sheet.
 - True and fair is a concept used in the presentation of financial statements, conforming to professional standards of clarity, transparency, and unbiasedness, even if it is a subjective assessment.
 - Schedule VI of the Indian Companies Act contains mandatory and recommendatory provisions for disclosure in published accounts of Indian companies.
 - Cost audit is a verification and report on the reliability of cost records maintained by an organization, usually used in the context of the provisions of the Indian Companies Act empowering the central government to prescribe and direct cost audits.
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CONCEPT REVIEW QUESTIONS

1. What, according to Horngren, are the three types of roles an accountant is expected to play in an organization?

2. What, according to Ijiri, are the expectations from an accountant?
3. Has the concept of double-entry bookkeeping become obsolete with the computerization of accounting?
4. Why is what an organization owes always equal to what it owns?
5. What is the role of cost accounting in the construction of a balance sheet?
6. Is a balance sheet only an aggregate summary of the transactions in an organization, or does it involve some judgmental estimation? Explain.
7. Mention the most important provision for external reporting by cost accountants which is unique in India.
8. Indicate three important techniques which enable management accountants to help in achieving strategic goals.
9. What could be the role of a cost accountant in research and development activity?
10. List three types of activities which are likely to take an increasing share of the time of management accountants of the future.
11. Why are ethics very critical for the profession of accountancy?
12. Rate the three ethical values of truthfulness, loyalty, and competence, on a scale of 1–10. Explain the reasons for the ratings chosen by you.

PROJECTS

1. Form a group of three or four students and interview a financial accountant and a cost accountant and summarize and critically analyse their perceptions of their roles in the organization.
2. Form a group of three or four students and interview a chief executive, a middle-level financial executive, and a junior-level non-financial executive regarding the role of a Cost Accountant in a manufacturing organization. Critique it.
3. Form a group of three or four students and study the role played by accountants and auditors in the happenings of Enron and WorldCom. Draw lessons.
4. Form a group of three or four students and study the role of accountants in the Tata Finance scam.
5. Form a group of three or four students and study the cost accounting rules prescribed by the Institute of Cost and Works Accountants of India (ICWAI) for any two industries.

**CASE
STUDY 1****Cost Benefit of Kaup Power Plant**

Energy International (EI), a multinational organization, proposed the setting up of the Kaup power plant on the western coast of India in the state of Karnataka. The plant would be based on imported oil. EI had, it seems, a cast-iron case. Even if they priced power at the existing tariffs prevailing in Karnataka, the project was shown to have an internal rate of return of 30 per cent. It would also provide a much-needed fillip to industrialization in the west coast of Karnataka. The project was supported by the political leadership of the state, which also had a strong representation at the national government. MJ, the American Chief Executive of Kaup Power Company (KPC)—the wholly owned subsidiary of EI—had close personal relations with political leadership in India, and had convinced EI that he could carry the project through the cost–benefit scrutiny of the Central Power Authority of India which had to clear the project.

EI had employed one of the well-known applied economists in the US, who showed that the benefits of poverty alleviation far outweighed the drainage on foreign exchange, which the project would entail in the early years. He also showed that even the foreign exchange would be recouped by increasing exports of horticultural products which the power availability would induce. MJ arranged for a blazing publicity campaign in the Indian media highlighting the benefits of the project. He soon found that he had indeed been over-optimistic.

The political opponents of his friends had whipped up an agitation against the destruction of the heritage temples at the site of the project. MJ assured them that he could compensate the affected population by helping in re-establishing the heritage constructions in a new site. He asked his cost accountant, GR, to prepare a note for the Planning Commission, which would take into consideration all these points. GR had a close friend, DK, who was an environmentalist. He was unassuming and was not given to categorical assertions without sufficient proof. He privately told GR that he had an apprehension that the air circulation in the area was such that the smoke which the power plant would spew could ruin vast areas with their ash deposits from the skies. Further, he felt that the powdery ash which the plant would produce might pose a disposal problem as it would occupy enormous space which could be made available to the plant only by diversion of land currently being used for agriculture. These were probably remediable with some costs. The smoke problem could be corrected with strong electrical precipitators fitted into the chimney. The powdery ash could be used up in making firebricks or cement, but in the net it would cost some money.

No one in the environmental analysis group of the planning commission was even remotely aware of all these possibilities. DK did not wish to pass

on this concern to the opponents of the project either, as he felt that his ideas were at the best only tentative at present. However, GR felt that the issue as posed by the American social cost–benefit study was nothing but a smoke screen, and many more problems lay behind the project than could be discerned by a superficial examination done by them. GR introduced DK to MJ and explained his apprehensions. MJ pointed out to GR that DK’s ideas were tentative and it would be unwise to bring this up in his report at this stage. GR sought a few days to think about it. In those few days, GR’s suspicions of the intentions of MJ became strong due to some developments. MJ said that he could arrange for GR’s son’s admission to a reputed institution in Pennsylvania as a company sponsor. He also said that he could arrange to send GR and his wife on an educational tour of the powerhouses in the US so that he could familiarize himself with power plant accounting. GR knew that social cost–benefit analysis is a hazy subject and the ultimate decisions often depend on the reputation of the analyst. He had a good reputation in the field as he had worked as a consultant to the planning commission. If he gave a favourable report, it was likely that the project would be passed. Even if he brought in DK’s views, he could bend the data to show that on the whole the project was positive in social cost benefits.

Discussion Questions

1. What are the options GR has?
2. Should he avail MJ’s offer even if he is sure that it would not affect his report?
3. Would it be fair to the company if he revealed the concerns of DK to the public even if they are not scientifically proven?
4. Would he be fair to society if DK’s views were not made public so that they could be debated?
5. Why should he, an accountant, concern himself with non-financial matters like pollution? Can you cite any support from the codes of conduct of accountants to support your arguments?

CASE STUDY 2

Excellent Engineering: Submersible Pump Division

Excellent Engineering was one of the prime engineering companies of India. AG, the Finance Director, had introduced many new ideas on the use of management accounting for achieving the strategic objectives of the company. The submersible pump division was one of its star units. The strategic goal of the division was to capture a major chunk of the domestic and South-East Asian and African markets. AG had therefore worked out a

scheme in consultation with the Divisional Manager, JS, wherein bonus would not be based on the profits of the division but more on the long-term objectives.

Bonus would be paid if the cost of quality was less than 10 per cent of the revenue, customer complaints was less than 4 per cent of the number of sales transactions, and delivery was on time on more than 92 per cent of occasions. They defined 'cost of quality' as a total of inspection costs, cost of warranty liability, cost of product testing, cost of scrap, and cost of design engineering. AG had recently recruited GN, an MBA from the Badami Institute of Management, whom he asked to work out these parameters for the division for the first month of the scheme. GN used the figures available in the accounting and production planning records of the division. He did not, however, depend solely on the number of complaints on record in their factory. He interviewed all the customers and used his findings in his report.

His numbers for the month in consideration were as follows:

I. Based on data collected from JS's department:

Sales: ₹50,00,000
 Inspection: ₹45,000
 Warranty liability: ₹1,30,000
 Production testing: ₹1,05,000
 Scrap: ₹1,15,000
 Design engineering: ₹1,00,000

II. Data collected by GN

Percentage customer complaints: 5 per cent
 On time delivery: 93 per cent

As directed by AG, GN gave a copy of the report to both AG and JS. JS was utterly disappointed with the report and thought that GN had gone out of the way to ferret out complaints from the customers. 'If the customers had a genuine complaint, they would come out on their own. Why should we instigate them to do so?', he said. AG thought that there was a point in what JS said. GN, however, felt that the complaints were genuine and the customers were very angry with some of the supplies. He said that the warranty liability is an indication of the customer dissatisfaction. Confiding in AG, GN said that he felt that the other quality cost data had also been doctored. He wanted permission to re-check them from the basic account records. AG did not want to do anything like that. 'We will introduce mistrust into the system, which is the last thing I want to do,' said AG.

Discussion Questions

1. What is the total cost of quality as percentage of sales?
2. What should GN do now—modify the report or persist in his findings?

ANNEXURES

Annexure 1.1 Code of Conduct of Accountants

Code of ethics for American management accountants

The standards of ethics for American management accountants has four basic stipulations: competence, confidentiality, integrity, and objectivity. It is significant that competence is part of the code. Other than the obvious directive not to accept gifts, etc., management accountants are expected to adhere to the truth even it be unfavourable to the company. Objectivity must always be maintained.

Ethics for Indian Accountants

The first schedule to the Chartered Accountants Act is an attempt to legislate ethical norms. It is in three parts, the first is for accountants in practice, the second for accountants in employment, and the third is a general one.

Part 1: For practising chartered accountants

Misconduct of a chartered accountant is defined as the following:

Clause 1: If he allows any person to practise as a chartered accountant if he is not one.

Clause 2: If he pays any brokerage or fee out of his remuneration to a non-chartered accountant.

Clause 3: If he shares the profit with a lawyer or broker.

Clause 4: If he enters into a partnership with a person other than a chartered accountant in practice and shares the fees with him.

Clauses 5,6, and 7: If he advertises or solicits work.

Clause 8: If he accepts a position held by another chartered accountant without communicating with him.

Clause 9: If he accepts an auditor's position in a company and he is legally prohibited from doing so.

Clause 10: If his charges are based on a percentage of profit.

Clause 11: If he engages in a profession other than chartered accountancy without the permission of the council.

The second schedule lists misconduct in the auditing profession.

Clause 1: He discloses confidential information about his client.

Clause 2: He certifies a statement without adequate scrutiny.

Clause 3: He lends his name to any financial projection for the future of the company.

Clause 4: He does not disclose his interest in any financial report.

Clause 5: He omits to mention any important fact of which he is aware in a financial statement.

Clause 6: He fails to report any major misstatement in the accounts of his client.

Clause 7: He is grossly negligent in work.

Clause 8: He fails to get adequate information from his client for certifying the accounts.

Part II: For employees

- If he discloses the confidential information of his employer.
- If he accepts gratification from a lawyer, broker, or customer dealing with his organization.

Part III: General, applicable to all

A person would be regarded as indulging in misconduct if he gives wrong information to the council.

Codes of conduct of the Institute of Cost and Works Accountants of India

The Institute of Cost and Works Accountants of India (ICWAI) also has norms similar to that of chartered accountants. The July 1980 declaration of its professional council also requires them to be straightforward, respect confidentiality, and be technically competent (Saxena and Vashist 2000). The emphasis is not on listing misdemeanor as in the codes of chartered accountant.

Code of conduct of the US Institute of Management Accountants

Practitioners of management accounting and financial management have an obligation to the public, their profession, the organization they serve, and to themselves to maintain the highest standards of ethical conduct. Practitioners will commit accepts contrary to the standards prescribed in this regard by the Institute nor Condone the Commission of such acts by others within their organization. The codes are grouped under the four objectives of the profession: competence, confidentiality, integrity, and objectivity.

Annexure 1.2 List of Industries and the Products Covered under Section 209(1)(D) of the Companies Act, 1956

No.	Industry	Products	GSR NO. and Date	Effective from	Remarks
1.	Cement	Cement, Clinker	536 (E) dt. 11.9.1997* 11.9.1997*	11.9.1997*	The Rules, 1997 notified in suppression of GSR 1402 dt. 12.9.66
2.	Cycles	Cycles, component of cycles	311 dt. 2.3.1967	1.04.67	
3.	Tyres & Tubes	Rubber tyres and tubes for all types of vehicles	1260 dt 10.8.1967	1.10.67	
4.	Air-Conditioners	Air conditioning system or device by which air is controlled for the fulfillment of required condition of the confined space through controlling temperature, humidity, air purity and air motion for human comforts	1447 dt. 16.9.1967	1.10.67	Application clause and tile from 'Room-Airconditioners' to Air -conditioners' changed vide GSR 668(E) dt. 28.9.1999
5.	Refrigerators	Refrigerators	1448 dt. 18.9.1967	1.10.67	
6.	Batteries other than Dry Cell Batteries	Batteries of all types other than Dry Cell Batteries	1467 dt. 20.9.1967	1.01.68	Application clause and tile from 'Automobile Batteries' changed vide GSR 667(E) dt 28.7.1999.
7.	Electric Lamps	Electric lamps of all types 27.9.1967	1503 dt.	1.01.68	Application clause changed vide GSR670(E) dt 28.9.1999
8.	Electric Fan	Any type of electric fan	2298 dt. 15.9.1969	1.01.70	
9.	Electric Motors	All types of electric motors	2574 dt. 24.10.1969	1.01.70	

10. Motor Vehicles	<p>(a) All types of passenger cars, jeeps and station wagons</p> <p>(b) All types of commercial vehicles, delivery and pick up vans</p> <p>(c) Motor cycles, scooters, scooterettes and mopeds</p> <p>(d) Three-Wheeler Vehicles</p> <p>(e) All types of tractors</p> <p>(f) Heavy Earth Moving Equipments</p>	537 (E) dt. 11.9.1997*	11.9.1997*	The Rules, 1997 notified in suppression of GSR 1465 dt. 17.5.1969
				No (e) added vide GSR 328(E) dt.3.6.1998.
				CAR (Tractors) Rules, 1971 applicable before 1.4.1999 vide GSR 329(E) dt. 3.6.98 No.(f) added vide GSR 280(E) dt. 24.4.2001
11. Aluminum	<p>1. Alumina</p> <p>2. Aluminium</p> <p>3. Aluminium ingots in any form or alloy</p> <p>4. Aluminium rolled products including foil</p> <p>5. Aluminium extruded products</p> <p>6. Properziron or Aluminium wire rod</p> <p>7. Any other aluminium product or its alloy</p>	334 dt. 25.2.1972	1.04.72	Application clause amended vide GSR NO 703(E) dt. 28.9.2001
12. Vanaspati	Refined vegetable oils and vegetable oil products as also Industrial Hard Oil.	1529 dt. 27.11.1972	1.01.73	Application clause amended vide GSR 287 dt. 29.5.1992
13. Bulk Drugs	Bulk Drugs under any system of medicine including Ayurvedic, Homeopathic, Siddha and Unani systems of medicine and Intermediates thereof	130(E) dt. 14.3.1974	1.04.74	Application clause amended vide GSR NO 707(E) dt. 28.9.2001

(Contd)

Annexure 1.2 (Contd.)

No.	Industry	Products	GSR NO. and Date	Effective from	Remarks
14.	Sugar	Sugar by vacuum pan process and excludes jaggery and khandsari	388(E) dt. 15.7.1997*	15.7.1997*	The Rules, 1997 notified in suppression of GSR 982(E) 4.9.1974
15.	Industrial Alcohol	1. Absolute Alcohol 2. Rectified spirit 3. Denatured and special denatured spirit 4. Power alcohol	532 (E) dt. 17.9.1997*	17.9.1997*	The Rules, 1997 notified in suppression of GSR 594(E) dated 30.12.1975
16.	Jute Goods	Jute goods - Yarn, Twine, Fabrics or any other product made wholly from, or containing not less than 50 % by weight of, jute including bimlipattam jute or mesta fibres	590(E) dt. 29.12.1975	1.01.76	
17.	Paper	Paper - used for printing, writing and wrapping, newsprint, paperboard, and exercise note books	601(E) dt. 31.12.1975	1.01.76	
18.	Rayon	1. Viscose staple fibre in all forms 2. Viscose filament yarn 3. Viscose tyre yarn/cord/Fabric 4. 100% Viscose Yarn Fabric 5. Acetate yarn/fibre 6. Rayon film (Cellophane Film)	606 dt. 20.4.1976	1.05.76	Application clause amended vide GSR 694 dt. 31.8.2000
19.	Dyes	Acid dyes, basic dyes, direct dyes, sulphur dyes, vat dyes, azoic dyes, ingrained dyes, metal complex dyes, disperse dyes, reactive dyes, oil dyes, and water soluble dyes	605 dt, 22.4.1976	1.05.76	
20.	Polyester	1. Polyester fibre 2. Polyester filament yarn	126(E) dt. 24.3.1977	1.04.77	No (3) to (7) inserted vide GSR 692(E) dt. 31.8.2000

3. Polyester Chips					
4. Polyester Fibre Fill (PFF)					
5. Partially Oriented Yarn (POY)					
6. Processed Polyester yarn (texturised, twisted, dyed, crimped, etc.)					
7. 100% Polyester fabric					
21. Nylon		157(E) dt. 1.4.1977	1.04.77		Application clause amended vide GSR 695(E) dt. 31.8.2000
1. Nylon chip					
2. Nylon fibre					
3. Nylon filament yarn					
4. Nylon partially oriented yarn					
5. Nylon tyre yarn or cord					
6. Nylon tyre cord fabric					
7. 100% Nylon fabrics					
22. Textiles		417(E) dt. 28.6.1977	1.07.77		Application clause amended vide GSR 29(E) dated 19.1.1994
Any art silk cloth, cotton yarn or cotton cloth, processed yarn and processed cloth, man- made fibre yarn or man made fibre cloth, silk yarn or silk cloth, wool, woolen yarn or woollen cloth, yarn or other textiles products.					
23. Dry Cell Batteries		45(E) dt. 31.1.1979	1.02.79		
All types of dry cell batteries and components thereof					
24. Steel Tubes and Pipes		506(E) dt. 10.5.1984	26.05.84		
Steel Tubes and Pipes (including stainless steel) both black and galvanized					
25. Engineering		688 dt. 25.6.1984	7.07.84		No. 4 to 7 added GSR 279(E) dt. 24.4.2001
1. Power driven pumps					
2. Internal combustion engines					
3. Diesel Engines					
4. All type of automotive parts and accessories					
5. Power Transformers					

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Annexure 1.2 (Contd)

No. Industry	Products	GSR NO. and Date	Effective from	Remarks
26. Electric Cables and Conductors	6. Electric generator 7. Machine tools (a) Power cables (All types—PILC, PVC, XLPE etc.) (b) VIR/Rubber covered cables and flexible wires of all types (c) PVC Insulated cables, flexible wires of all types including switchboard wires and cables (d) Enamelled covered wires and strips (e) Wire and strips covered with paper, glass, silk and any other types of insulating materials (f) AAC/ACSR Conductors (g) Telecommunication cables	767 dt. 7.7.1984	21.07.84	
27. Bearings	Bearings of various types e.g. ball and roller bearings, needle bearing of various sizes	664 dt. 1.7.1985	13.07.85	
28. Milk Food	Infant Milk Food or Milk Food as malted milk food, energy food or food drink under any brand name (a) “Infant Milk Food” includes all types of milk food intended for the routine, complementary or supplementary food of infants and children up to the age of five years and other types of modified milk foods for infants	704(E) dt.28.9.2001*	29.9.2001*	CAR (Infant Milk Food) Rules 1974 and CAR (Milk Food) Rules,1986 merged and application clause amended vide GSR 704(E) dt. 28.9.2001

which are intended for the feeding of infants and children during the treatment of gastrointestinal disorders;

(b) “Milk Food” means any food produced by mixing whole milk, partly skimmed milk or milk powder with ground barley malt or any other malted cereal grain, wheat flour or any other cereal flour or malt extract, with or without addition of flavouring agents and spices, edible common salt, sodium or potassium bicarbonate minerals and vitamins, cocoa powder, sugar or sweetening agents or other edible materials

29. Chemical	01. Acetic Acid 02. Acetic Anhydride 03. Acetone 04. Aluminium Fluoride 05. Aniline 06. Benzene 07. Boric Acid 08. Butadiene 09. Butanol 10. Calcium Carbide 11. Carbon Black 12. Caustic Soda 13. Chloro Methanes 14. Diacetone Alcohol 15. Diethylene Glycol	596 dt. 8.8.1987	8.08.87	Application clause amended vide GSR 562(E) dated 2 nd September,2004
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Annexure 1.2 (Contd)

No.	Industry	Products	GSR NO. and Date	Effective from	Remarks
16.		2-Ethyl Hexanol			
17.		Ethylene			
18.		Ethylene Dichloride			
19.		Ethylene Glycol			
20.		Ethylene Oxide			
21.		Formaldehyde			
22.		Isopropanol			
23.		Linear Alkyl Benzene			
24.		Maleic Anhydride			
25.		Methanol			
26.		Methyl Ethyl Ketone			
27.		Methyl Isobutyl Ketone (MIBK)			
28.		Nitrobenzene			
29.		Ortho Nitro Chloro Benzene			
30.		Para Nitro Chloro Benzene			
31.		Penta Eritritol			
32.		Phenol			
33.		Polyethylenes viz. LDPE, HDPE, LLDPE			
34.		Polypropylene			
35.		Polyethylene Glycol			
36.		Propylene			
37.		Soda Ash			
38.		Sodium Tripoly Phosphate			
39.		Sulphuric Acid			
40.		Resins (excluding natural resins), Paints, Varnishes and Plastics			
41.		Synthetic Rubber			
42.		Titanium Dioxide			
43.		Toluene			
44.		Xylenes			

30. Formulations	All formulations under any system of medicine including Ayurvedic, Homeopathic, Siddha and Unani	452 dt. 22.4.1988	4.06.88	Applicability clause revised vide GSR 706(E) dt. 28.9.2001
31. Steel Plant	Steel and steel products, Steel products includes Ingot Steel, Blooms, Billets, Slabs (code as well as semi-finished); steel products produced by backward integration like Coal based Sponge Iron, Gas based hot briquetted Iron, steel products produced by forward integration like Beams, Angles, Tees, Sees, Channels, Pilings, Rails, Crane Rails, Joint Bars, Bare (Round Squares, Hexagonal, Octagonal, Flat, Triangular, Half Round); Wire, Wire Ropes, Nails, Wire Fabrics, Plates, Pipes and Tubes, HR Coils/Sheets, CR Coils/Sheets	574 dt. 31.7.1990	8.09.90	'Steel Products' defined vide circular no. 52/378/CAB-86-(CLB) dt. 29.6.1992
32. Insecticides	1. Insecticides 2. Fungicides 3. Redenticides 4. Nematicide 5. Weedicide 6. Plant growth Regulant 7. Herbicides 8. Fumigants 9. Bio-pesticides	258 (E) dt. 3.3.1993	4.03.93	The words 'Steel Plant' substituted for 'Mini Steel Plants' vide GSR 281(E) dt.24.4.2001
33. Fertilizers	1. Straight Nitrogenous Fertilizers 2. Straight Phosphatic Fertilizers	261(E) dt. 5.3.1993	5.03.93	

(Contd.)

Annexure 1.2 (Contd)

No.	Industry	Products	GSR NO. and Date	Effective from	Remarks
		3. Straight Potassic Fertilizers			
		4. N. P. Fertilizers			
		5. N. P. K. Fertilizers			
		6. Micro Nutrients			
		7. Fortified Fertilizers			
34.	Soaps and Detergents	Cleansing material used for cleaning, laundry/washing, bathing/toilet purposes and includes soaps and detergents (Whether in the form of cake, powder or liquid)	677(E) dt. 29.10.1993	29.10.93	
35.	Cosmetics and Toiletries	Powders, Creams, Toothpastes, Toothpowders, Shaving Creams, After shave lotions, Shaving soaps, Shaving foams, Perfumes, Hair oils, Hair creams, Oxidation hair dyes, Mouthwash, Cologne, Shampoos - soap based, Shampoos - synthetics, detergent based, Room fresheners, Deodorants, Surfactants	678(E) dt. 29.10.1993	29.10.93	
36.	Footwear	Shoes, boots, sandals, chappals, slippers, play shoes and moccasins	186(E) dt. 12.4.1996	12.04.96	
37.	Shaving Systems	1. Shaving blades 2. Razors 3. Any part or component thereof	202(E) dt. 6.5.1996	6.05.96	

38. Industrial Gases	<p>4. Any other shaving instrument</p> <p>Oxygen Gas, Nitrogen Gas, Acetylene Gas, Hydrogen Gas, Nitrous oxide Gas, Argon Gas, Helium Gas, Carbon dioxide Gas</p>	<p>271(E) dt. 9.7.1996</p>	<p>9.07.96</p>
39. Mining and Metallurgy	<p>List of products (metals and non-metals, their minerals, ores and alloys)</p> <ol style="list-style-type: none"> 1. Uranium 2. Thorium 3. Zirconium 4. Titanium 5. Lead 6. Copper 7. Zinc 8. Nickel 9. Cobalt 10. Chromium 11. Gallium 12. Germanium 13. Platinum 14. Molybdenum 	<p>276(E) dt. 24.4.2001</p>	<p>24.04.2001</p>
40. Electronic Products	<ol style="list-style-type: none"> 1. All Consumer electronics such as television both black and white and colour, video cassette recorder, video cassette player, audio compact disc player, video compact disc player, digital video compact disc player, radio receiver, tape recorder and combination, 	<p>277(E) dt. 24.4.2001</p>	<p>24.04.2001</p>

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Annexure 1.2 (Contd)

No. Industry	Products	GSR NO. and Date	Effective from	Remarks
	<p>electronic watch and electronic clock, etc.</p>			
	<p>2. Industrial electronics including all control instrumentation and automation equipment.</p>			
	<p>3. Computer including personal computer, laptop, note book, server, workstations, super-computers, data processing equipment and peripherals like monitors, keyboards, disk drivers, printers, digitizers, SMPs, modems, networking products and add-on cards.</p>			
	<p>4. Communication and broadcasting equipment including cable television equipment.</p>			
	<p>5. Strategic electronics and systems such as navigation and surveillance systems, radars, sonars, infra-red detection and ranging system, disaster management system, internal security system, etc.</p>			
	<p>6. Other electronic component and equipment such as picture tube, printed circuit board, etc.</p>			
41. Electricity	<p>Generation of electricity from: 1. (a) thermal power (b) gas turbine (c) hydro-electric</p>	<p>G.S.R. No 913(E) dt. 21.12.2001</p>	<p>21.12.2001</p>	<p>Ammended vide G.S.R.709(E) Dated 7th December 2005 and G.S.R.387(E) Dated 27th</p>

- power (d) atomic power (e) solar power (f) wind power(g) and other source of energy;
- 2. transmission and bulk supply of electricity
- 3. Distribution and bulk supply of electricity

42. Plantation Product
 1. Tea and tea products
 2. Coffee and coffee products
 3. Other commercial plantation products including seeds thereof

G.S.R. 8.10.2002
 685(E)dt. 8th
 Oct., 2002

43. Petroleum Industry

Manufacturing crude oil, gases (including compressed Natural Gas or Liquefied Natural Gas and re-gasification thereof) or any other petroleum products

G.S.R. 8.10.2002
 686(E)
 dt. 8th
 Oct., 2002

44. Telecommunication

Processing of any one or more of the telecommunication activities namely:

G.S.R. 8.10.2002
 689(E)
 dt. 8th
 Oct., 2002

1. Basic telephony:
 - (a) Telephone access
 - (b) Local call
 - (c) Subscriber Trunk dialing (STD)
 - (d) International subscriber dialing (ISD)

2. Cellular mobile
3. Telex
4. Telegraphy
5. Voice mail/Audiotex service
6. Internet operations including gateway service/E-mail

Annexure 1.2 (Contd)

No.	Industry	Products	GSR NO. and Date	Effective from	Remarks
7.		Packet switched public data network(PSPDN) service			
8.		Wireless in local loop (WILL) service			
9.		Public mobile radio trunk service			
10.		Very small Aperture Terminal service			
11.		Global mobile personnel communication service			
12.		Leased circuits			
13.		Internet ports			
14.		National Long Distance Operator			
15.		Internet Telephony			
16.		Radio Paging			
17.		Any other telecommunication service for commercial use.			

*Amendment Rules

Note: Cost Accounting Records Rules are not applicable to a company:

- a. the aggregate value of the machinery and plant installed wherein, as on the last date of the preceding financial year, does not exceed the limits as specified for a small scale industrial undertaking under the provisions of the Industries (Development and Regulation) Act, 1951 (65 of 1951); and
- b. the aggregate value of the turnover made by the company from sale or supply of all its products during the preceding financial year does not exceed ten crore rupees.

Source: <http://www.mca.gov.in/Ministry/RecordRules44.html>