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# Chapter 1: ACCOUNTING FOR MANAGEMENT

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1 Purpose & Role of Management Accounting

1.1 Purpose of Management Accounting

Cost and management accounting is about providing necessary financial and non-financial information to management and employees at all levels inside the organization for decision making purpose, so that they can better be able to make rational decisions in timely manner.

Example:

Reporting information on a cost of product to marketing department so the selling price of the product can be determined.

For this purpose, cost and management accounting also involves information gathering from inside as well as outside the organization.

Example:

Inside information can be number of units made by production department each month.

Outside information can be market demand of the product offered by the organization.

Diagram:

1.2 Role of Management Accounting

Cost and management accounting can have different types of roles in different organizations.

Following are the roles, which are commonly performed by the cost and management accounting function or management accountant.

<table>
<thead>
<tr>
<th>Roles</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic</td>
<td></td>
</tr>
<tr>
<td>Macro environment</td>
<td></td>
</tr>
<tr>
<td>Management Accountant</td>
<td></td>
</tr>
<tr>
<td>Tactical Management</td>
<td></td>
</tr>
<tr>
<td>Operational Management</td>
<td></td>
</tr>
</tbody>
</table>
### Setting product costs & selling price
Management accountant works out the product cost using suitable costing techniques such as absorption and marginal costing methods (see later). They calculate selling prices based on mark-up (Profit % on cost) set by the senior management.

### Budgeting and forecasting
Management accountant prepares budgets based on present and future objectives and strategies of the organization. For this purpose, they forecast (estimate) many variables such as sales volume and cost changes.

### Communicating & Reporting
Management accountant gathers data and information from internal and external sources. They compile this information in an appropriate format, structure and report it to appropriate level of management (strategic, tactical or operational) in an organization in timely manner.

### Assisting in decision making
Management accountant provides financial and non-financial information, which can assist managers to make informed decisions. They use techniques such as *Linear programming* (not in syllabus) and marginal costing method (see later) etc.

### Performance management & control
Management accountant establishes performance measures (such as ROCE, RI etc) against which performance of individuals & organization as a whole can be evaluated. He/she gathers information and compares it against standard so that performance can be rewarded or penalized.

### Financial Accounting Vs Cost & Management Accounting

<table>
<thead>
<tr>
<th>Financial Accounting</th>
<th>Management Accounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial accounting is required by laws such as company law. Non-compliance can result in penalties and punishments.</td>
<td>Management accounting is not required by law.</td>
</tr>
<tr>
<td>Financial accounting is for providing information to external parties such as shareholders, government and bankers etc.</td>
<td>Management accounting is for providing information to internal parties such as Board of directors, managers and employees.</td>
</tr>
<tr>
<td>Financial accounting uses international and local frameworks and accounting standards to prepare standardized financial statements.</td>
<td>Management accounting adopts flexible approach to internal reporting. Format, structure, level of details and channel of communication depend on situation to situation.</td>
</tr>
</tbody>
</table>
Financial accounting mostly provides financial information along with minimum non-financial disclosure required by accounting standards in notes to the financial statements.

Management accounting provides both financial and non-financial information. Usually explanation and interpretation of technical financial figures.

Financial accounting information is historical and do not provides information on future prospects of an organization.

Management accounting is present and forward looking. It assists management in efficient and effective operation of an organization.

Financial accounting provides information on performance and position of an organization at regular intervals usually 12 months.

Management accounting provides information for decision-making purpose whenever needed, so that organizational objectives can be achieved.

3  Planning, Decision Making & Control Process

Diagram:

Planning → Decision Making → Control

Feedback

3.1  Planning

Planning is about looking into the **future**.

It involves asking following questions.

→ Where we are?
→ Where we want to be?
→ How do we get there?
→ How external factors will influence the organization? (*PESTEL factors*)
→ What skills and resources will be needed? (*SWOT analysis*)
After considering all above questions at minimum, Organizational Objectives are set and strategies are decided to achieve those objectives as part of planning process.

Everything considered during the planning process should be recorded and updated each time plan is revised.

### 3.1.1 Objectives
Objectives are long term **SMART** (specific, measureable, attainable, relevant and time bounded) targets set by the organization.

**Examples:**

- *Increase Profitability (specific) of the organization (relevant) by 10% (measureable, attainable) in two years (time bounded). This can be an objective of profit motive organization.*
- *Increase number of users (specific) of the golf club (relevant) by 20% (measurable, attainable) in five years (time bounded). This can be an objective of Not for profit organization.*

Objectives should be consistent with the mission of the organization.

**Example:**

*If organization mission is to provide high quality goods or services to its customer then objective of cost reduction will not lead fulfilment of mission. Rather organization should set the objective of lowering no of complaints.*

### 3.1.2 Strategies
Strategies are **short-term plans** made to achieve organizational objectives.

**Examples:**

- *Making new products and selling them into existing market.*
- *Sell existing products into new market.*
- *Provide luxurious environment to golf club members.*

Strategies made by the organization should be consistent with mission, objectives.
Example:
*If organization set the objective implies very fast growth then use of internal savings (retained earnings) will not lead to fulfilment of objective. Rather organization should raise finance (shares or loan) to support the objective of very fast growth.*

3.2 Decision Making
Management at all levels needs to take decisions to fulfil objectives. Decisions made by the managers must be consistent with the organizational mission, objectives and strategies.

All decision made by the managers should be recorded so that they can be made accountable for their decisions.

3.3 Control
Control is exercised to **evaluate** the results of decision-making. Whether the decisions made are correct or different course of action should be taken.

Actual results should be compared with plan and **variance** (divergence) from plan needs to be investigated to determine causes.

Any information obtained during the control process is **feedback** into the planning process so that realistic plans can be made next time and informed decision can be taken.

4. Types of Planning

<table>
<thead>
<tr>
<th>Strategic Planning</th>
<th>Tactical Planning</th>
<th>Operational Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long term Planning.</td>
<td>Medium term planning.</td>
<td>Short term planning.</td>
</tr>
<tr>
<td>Brief planning.</td>
<td>Moderate planning.</td>
<td>Detailed planning.</td>
</tr>
<tr>
<td>Largely planning based on external environmental information.</td>
<td>Break up of strategic plans into plans capable of implementation.</td>
<td>Planning based on internal historical data (past experiences).</td>
</tr>
<tr>
<td>Issues covered by the strategic planning would be product development and marketing strategy.</td>
<td>Deciding, how much units would be manufactured for each product? What kind of pricing technique to adopt?</td>
<td>Issued covered by operational planning would be, how frequent machine maintenance should be carried out?</td>
</tr>
</tbody>
</table>
5 Difference between Data & Information

<table>
<thead>
<tr>
<th>Data</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data is the collection of raw facts and figures</td>
<td>Information is the meaningful compilation of data.</td>
</tr>
<tr>
<td>Data do not support decision-making.</td>
<td>Information supports decision-making.</td>
</tr>
<tr>
<td>Statement of comprehensive income and statement of financial position are examples of data.</td>
<td>Reports to the management on organizational performance are an example of information.</td>
</tr>
</tbody>
</table>

6 Attributes of Good Information

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accurate</td>
<td>Information should be free from any arithmetical or grammatical mistakes.</td>
</tr>
<tr>
<td>Complete</td>
<td>Information should not be less than 100%.</td>
</tr>
<tr>
<td>Cost-beneficial</td>
<td>Benefits of obtaining information must exceed its costs.</td>
</tr>
<tr>
<td>User-targeted</td>
<td>Information should be targeted to appropriate person i.e. who have the ability to make decisions based on such information.</td>
</tr>
<tr>
<td>Relevant</td>
<td>Information should be relevant to the matter under consideration.</td>
</tr>
<tr>
<td>Authoritative</td>
<td>Information should be from trustworthy source. If anyone has to believe to be true.</td>
</tr>
<tr>
<td>Timely</td>
<td>Information should be communicated in time. Example news would not be of any use if communicated late.</td>
</tr>
<tr>
<td>Easy to use</td>
<td>Users of the information must able to understand and apply it for decision-making purpose.</td>
</tr>
</tbody>
</table>

7 Limitations of Management Accounting Information

Limitations of management information for decision-making purpose are given below.

7.1 Lack of technical expertise

Managers may not have enough knowledge and experience to understand technical jargons and methodologies used for preparing reports.
7.2 Lack of time
Managers may not have enough time to read every report thoroughly present to them or management accountant may not be able to supply information within time.

7.3 Lack of understanding
Managers may not understand the importance and role of management accounting information for decision-making purposes. They may consider provision of such information useless or reduction of their autonomy to making decisions.

7.4 Lack of Relevant & Reliable Information
Sufficient (relevant) and appropriate (reliable) information may not be available to the management accountant to analyze and report information based on them.

8 Practice Questions & Solutions
8.1 Question
The following assertions relate to financial accounting and to cost accounting:

(i) The main users of financial accounting information are external to an organisation.

(ii) Cost accounting is that part of financial accounting, which records the cash received and payments made by an organisation.

Which of the following statements are true?

A. Assertions (i) and (ii) are both correct.
B. Only assertion (i) is correct.
C. Only assertion (ii) is correct.

Solution:
Correct answer is B.

Explanation:

(i) The main objective of financial accounting information (financial statements) is to provide information to shareholders on the performance of the company those are external to the organization. However, it is also useful for other stakeholders (interested parties) such as bankers, suppliers, tax authorities, customers etc. Management and
other employees of the company needs detailed information those are internal to the company. Detailed information can be on elements of product cost such as material, labour and production overheads.

**(ii)** Management accounting is separate function from financial accounting. They are both sub departments of accounting department. Management accounting department is not responsible for recording cash receipts and payments it is the responsibility of financial accounting department. Management accounting only make use of financial accounting information for providing feedback to management on their performance.

**8.2 Question**
Which of the following statements relating to management information are true?

1. It is produced for parties external to the organisation
2. There is usually a legal requirement for the information to be produced
3. No strict rules govern the way in which the information is presented
4. It may be presented in monetary or non-monetary terms

A. 1 and 2  
B. 3 and 4  
C. 1 and 3  
D. 2 and 4

**Solution:**
Correct answer is B.

**Explanation:**

1) Management accounting information is produced for internal management and other employees to the organization.

2) Management accounting information is not required by law.
3) Management accounting information is presented flexibility depending on urgency, relevance to the user and reliability (estimated or actual) of information required.

4) Management accounting information can be presented in monetary terms such as variable cost and non-monetary terms such as number of goods reworked. Please! Remember that non-monetary information can be alphabetic as well as numerical.

8.3 Question
Management accounting information is financial as well as non-financial. Management accounting reports also involves interpretations of fact and figures and recommendations on the course of action taken by the management.

Data is information that has been processed in such a way as to be meaningful to its recipients.

Is this statement true or false? (1 mark)

A. True
B. False

Solution:
Correct answer is B.

Explanation:
Data is separately bits of information. Data has to be processed in some way to be meaningful.

Data is not information in itself; it is merely raw facts and figure used to produce information.

Example:
Financial statement does not provide information for investment decision. Investor has to perform ratio analysis to obtain information for investment decisions.

Return on investment (ROI) of 14% calculated based on data given in financial statement to obtain information on profit generated on investment in the company.
8.4 Question
The following statement refers to a quality of good information:

The cost of producing information should be greater than the value of the benefits of that information to management.

Is this statement true or false? (1 mark)

A. True
B. False

Solution:
Correct answer is A.

Explanation:
In general sense, you might have thought B. However, in business sense, quality of information is related to cost. Business activities are pursued to increase economic wealth. If cost of obtaining information does not exceed benefits then it will lead to reduction in wealth.
# Chapter 2: SOURCES OF DATA

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<tr>
<td>6</td>
<td>Practice Questions &amp; Solutions</td>
<td>35</td>
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</table>
1 Sources of Data & Information
1.1 Sources outside the organization
- Newspaper, magazines and published books.
- Work done by government departments such as monetary policy and fiscal policy.
- References from other organizations. These can be competitors, suppliers and customers.
- Tele communication media such as television and internet.
- Labour unions, trade associations and shareholders through general meetings.
- Academic and professional education providers.
- External market research.

1.2 Sources inside the organization
- Invoice, GRN, Vouchers and other internal documents.
- Informal gossip (grapevine) around the organization.
- Formal team meetings.
- Memo and reports.
- Intranet and e-mails.
- Surveys in the form of questionnaires to employees.
- Observing employees attitudes and morale.

2 Uses & Limitations of published Information/Data
2.1 Uses of Published Information
- Published information is used as cost effective way gathering information for initial planning.
- Published information is used for those areas where information gathering by organization is not possible due to lack of expertise or cost associated with obtaining information.
- It is used where information is immediately needed.
2.2 Limitations of Published Information

→ Published information may not be available in a **format and medium** organization wants.

→ Published information can be too general and **not precisely applicable** to the type of organization in question.

→ Published information can create **information overload** such as lengthy books.

→ Information from media such as internet may not be reliable unless we have the information on **knowledge and experience** of publisher.

→ They take **no responsibility** for information provided as opposed to in-house employees who can be held accountable.

3 Impact of Economic Environment on Cost & Revenue

→ Economic environment decides the demand for goods or services. Business cycle such as recession or growth can influence what and how much organization produce.

→ Economic environment decides the price for goods or services. If economy is prospering higher pricing can be charged to customer than if contracting.

→ Economic environment affects the investment decision. If inflation increases, it will affect the net present value of future cash flows of the organization.

→ Economic environment affects source and duration of finance to be used for operating organization and growth. If interest rate is expected to rise then, organization will prefer issuing shares to avoid interest expense.

→ Rise in foreign exchange rate of home currency will make exports expensive for buying organization in other country. So reduced sales.
4 Sampling Methods or Techniques
4.1 Statistical Terms
4.1.1 Population
Population is the whole set of items subject to statistical matter under consideration.

**Example:**
*Population can be whole workforce within an organization for the purpose surveying labour attitude towards work.*

4.1.2 Sample
Sample denotes individual items selected from a population.

**Example:**
*Selection of 10% of workforce represents sample for total workforce as population.*

Samples are used to reduce the amount of work, time and cost associated with research work. Conclusions based on examination of samples are assumed as conclusion for whole population.

**Example:**
*Conclusion reached on attitudes of workforce either good or bad based on sample is assumed as attitude of whole workforce in a population.*

4.1.3 Sample Size
Sample size is the number of items selected as sample from a population.

**Example:**
*10 out of 100 workers are selected from total workers. It represents sample size of 10.*

Sample size depends on judgement of researcher, which in turn is influenced by time available, and cost required and need for accuracy of outcome.

4.1.4 Frequency
Frequency is the average distance among samples in a population.

Lower distance leads to higher frequency and higher distance leads to lower frequency.
Example:

If we take number of years of experience at one axis and number of workers in workforce at other axis then frequency depends on different between numbers of year experience among workforce. If difference between highly experienced and least experienced worker is of 30 years then it is said to have lower frequency than difference between highly experienced and least experienced worker would be of 10 years.

Diagram

4.1.5 Distribution

Distribution is the shape represented by individual coordinates when joining them together. Alternatively, the way in which samples is spread along the graph paper.

Normal distribution is also called bell shaped curve. It means frequency of samples will be reduced we will move farther from means or average.
4.1.6 Standard Error
Standard error is difference in conclusion reached or decision taken because of using sample rather than whole population is used.

In case of low frequency, risk of standard error increase as there can be situation sufficiently different, which is not covered by sample. Therefore, sample size has to be increased to cover every possible situation.

4.1.7 Standard Deviation
Standard deviation is the probability that estimated results will be different from actual results.

4.1.8 Probability
Probability is the likelihood of occurrence or non-occurrence of particular outcome.

4.2 Random Sampling
Random sampling is a type of non-statistical sampling method. It is also called non-probability sampling.

Random sampling involves selection of number of items within population without any planning. In random sampling, each sample in a population has an equal chance of being selected.

Example:
If there are 100 samples in a population then each sample has 1% probability of being selected.

4.2.1 Benefits
Random sampling is cost effective, efficient method and does not require any technical knowledge, resources and planning time for determining samples.

4.2.2 Limitations
Random sampling involves the risk of bias by the researcher. Researcher may deliberately choose those samples which are easy to interview.

Example:
Researcher may choose workers, which he/she considers cooperative.

Samples selected based random sampling may not be representative of whole population even if samples are fairly selected by researcher. This will expose the sample selected to standard error.
Example:

**Random selection of may lead to selection of most experienced workers those are likely to good attitudes towards. This will lead to wrong conclusion of research work because inexperienced workers are not interviewed in the research.**

4.3 Systematic Sampling

Systematic sampling makes use of statistical techniques.

Systematically sampling is used to reduce the chances of standard error. It involves usage of unbiased (fair) formula so that wide variety of samples can be selected, which is more likely to be representative of whole population.

However, systematic sampling involving selection of first sample randomly. It forms the input to the formula for selection of subsequent variable. Randomly selected sample is also counted as the sample.

**Example:**

Selection of 5th worker in a payroll register randomly then each subsequent sample is selected after 8 number of workers from recent worker (14th, 22nd, 30th etc) until required sample size is achieved.

4.3.1 Benefits

Systematic sampling does not involve risk of bias by the researcher.

It helps to reduce the risk of standard error.

4.3.2 Limitation

Samples selected based on systematic sampling depends on statistical formula used to select samples from the population.

4.4 Stratified Sampling

**Diagram:**

<table>
<thead>
<tr>
<th>Stratums</th>
<th>Range in $</th>
<th>Average sales revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 customers (Poor)</td>
<td>50 – 150</td>
<td>50,000</td>
</tr>
<tr>
<td>300 customers (Middle class)</td>
<td>151 – 500</td>
<td>97,650</td>
</tr>
<tr>
<td>150 customers (Rich)</td>
<td>501 – 1000</td>
<td>112,575</td>
</tr>
</tbody>
</table>

Stratified sampling makes use of stratums (layers).

Samples in a population having identical characteristics are combined into layers. Range is established for each layer so that characteristics of each sample can be determined.
Example:

Number of customers who brought goods or services of value from $50 to $150 are grouped into one layer. Similarly, number of customers who brought goods or services of value from $151 to $500 are grouped into second layer, which is placed below first layer.

This process continues until all the samples in a population are allocated to each layer.

From each layer certain percentages of samples are chosen for examination.

Example:

10% samples from top layer, 20% samples from second layer and 100% percent samples from third layer.

4.4.1 Benefits

It provides the basis for justification in case data gathered results in undesired outcome.

It allows samples of high importance can be identified and makes certain that no sample of high importance is examined.

Example:

Large amount of sales revenue depends on small numbers of customers. Therefore, organization should take the interviews of small number of customers to secure large amount of sales revenue.

It saves cost as samples of low importance can be examined in part.

Example:

Small amount of sales revenue depends on large number of customers. Therefore, organization spent least time and money to secure small amount of sales revenue.

4.4.2 Limitations

Stratified sampling is very time consuming in terms of allocation of sample into layers. However, spreadsheet software can do this quickly and accurately.

Stratified sampling requires data to be available in electronic format in order to use spreadsheet software. If data is not available in electronic format then additional cost will be incurred to convert data into electronic format.
Stratified sampling involves selection of samples from each layer randomly.

4.5 Clustered Sampling
Clustered sampling makes use of groups.

Clustered sampling involves grouping of samples in a population into physically identifiable blocks.

Example:
Grouping of customers with respect to location (East, West, North and South).

Samples inside each group must be different in characteristics from each other.

Example:
At the East (cluster) of the country, number of customers (samples) of different economic status such as poor, middle class, rich etc can be interviewed.

Number of cluster chosen depends on the judgement of researcher.

Example:
Researcher may choose the East and the North cluster. However, if he/she chooses the East and the West then it will require more travelling time and cost.

Samples in each cluster chosen should be examined in full. Examination of part of the cluster will not provide results, which are representative of whole population.

Example:
If the East location (cluster) is chosen then all the customers (samples) having different economic status should be interviewed.

Result of cluster examined is assumed as result for whole population.

Example:
If the East location is interviewed, then interviews of customers in the East location are considered as viewpoints of customers in other locations (West, North and South).
4.5.1 Multistage Sampling
Multistage sampling is an advanced form of clustered sampling.

It also makes use of groups. It subdivides each group into subgroups.

Example:
Locations inside the country, can be subdivided into towns, towns can be subdivided into blocks and so on.

These subgroups are also known as secondary groups.

It is useful where the primary group is too large to be used for research purposes.

It allows the selection of secondary groups, which provide most benefits at least cost.

Example:
Selection of particular town (sub group) for research may be it is easy to approach customers in that town. Customers may live nearer (high frequency) to each other. It will reduce travelling cost and increase speed of research.

4.6 Quota Sampling
Quota sampling involves the selection of a definite number of samples from various categories of population. Population can be categorized with respect to age, sex, economic status, cultural background, language, etc.

Example:
Selection of 100 samples for interviewing persons from age 25 to 40 and selection 50 samples interviewing persons from age 41 to 60.

Number of samples to be selected from each segment depends on the judgement of the researcher.

Quota sampling is especially useful when the demographic balance of different groups is known.

Example:
Suppose demographic balance of two females for each male in a country. Based on that researcher can select samples from a particular category in the ratio of (female to male) 2:1.
5 Choosing Sampling Methods

Choosing an appropriate sampling method is a skill, it is not knowledge that you can learn. Therefore, you need to know following factors to choose between various sampling techniques. Effectiveness of choice of sampling method depends on skills of researcher.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Cost of sampling must exceed benefits. Cost of obtaining information must not exceed benefits.</td>
</tr>
<tr>
<td>Efficiency</td>
<td>Sampling method should enable researcher to conclude its researcher within available time.</td>
</tr>
<tr>
<td>Risk</td>
<td>Sampling method should be able to reduce or eliminate the risk of standard error.</td>
</tr>
<tr>
<td>Resources</td>
<td>Sampling method is feasible using the men, equipment, material and money available to the organization.</td>
</tr>
<tr>
<td>Relevance</td>
<td>Sampling method should be helpful in targeting required samples depending on research work.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Factors</th>
<th>Random</th>
<th>Systematic</th>
<th>Stratified</th>
<th>Clustered</th>
<th>Multistage</th>
<th>Quota</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Efficiency</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Risk</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Resources</td>
<td>Less</td>
<td>Less</td>
<td>More</td>
<td>More</td>
<td>More</td>
<td>Less</td>
</tr>
<tr>
<td>Relevance</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

6 Practice Questions & Solutions

6.1 Question (P/P, Q1):
Under which sampling method does every member of the target population have an equal chance of being in the sample?

A. Stratified sampling
B. Random sampling
C. Systematic sampling
D. Cluster sampling

**Solution:**
Correct answer is B.
Explanation:

**A**
Stratified sampling involves categorizing samples into layers. Samples are categorized based on some established criteria. Therefore, each member of population does not have equal chance of being in the sample.

**B**
Random sampling is the selection of sample without any planning. It means it does not involve any bias and equal opportunity of being selected is available to every single sample in the population.

**C**
Systematic sampling involves the selection of members of population based on established formula. Therefore, each member of population does not have equal chance of being in the sample.

**D**
Cluster sampling involves categorizing samples into groups. Samples having particular characteristics of included in a group. Therefore, each member of population does not have equal chance of being in the sample.
# Chapter 3: COST CLASSIFICATION & BEHAVIOUR

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<th>Headings (click the cross-ref below for easy navigation)</th>
<th>Pg.no</th>
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1 Production & Non Production Costs

1.1 Production costs
Production costs are the costs incurred in manufacturing products (goods or services). It includes all the cost relating to activities performed inside the production department.

Example:
In chair manufacturing company, costs incurred in manufacturing of chair can be following:

→ Cutting cost is incurred to cut wood into pieces.
→ Assembling cost is incurred to join pieces to make a chair.
→ Finishing cost is incurred to make chair of merchantable quality.
→ Inspection cost is incurred to ensure chair meets quality requirements of the customer.
→ Packaging cost is incurred to ensure chair reaches to customer in good condition.

1.2 Non-Production Costs (Period Costs)
Non-production costs are overhead costs incurred for the purpose other than manufacturing of products. Non-production overheads are incurred to enable fluent operation of production and other organizational activities.

Example:
Material movement cost to transfer raw material from warehouse to production department.

Sales commission paid to sales personnel to enable organization achieve its profit-making objective.

Office rent paid to coordinate organizational activities.

Interest expense paid against raise funds to carryout production and selling activities.

For management accounting purpose, it depends upon organization policy whether to include non-production overheads into product cost or not. Organization may want to include non-production overheads for
pricing products to ensure full recovery of all the cost incurred by the organization from customers.

For financial accounting purpose, these costs are treated as period cost (Period cost is the cost incurred during an accounting period. It is stated below the gross profit as operating cost).

2 Elements of Non Production Costs
2.1.1 Selling & Distribution Overheads
It includes every costs incurred after the manufacturing of product until delivery to the end costumer (user of the product).

**Examples:**
- Storage cost incurred to be able to sell finished goods when required by the customer.
- Freight cost incurred which includes wages paid to the driver & fuel.
- Insurance cost to cover the risk of loss of goods in transit.

2.1.2 Administration Overheads
Administration overheads include all costs incurred in planning, coordinating and controlling the activities and resources of the organization.

These costs are incurred to ensure the efficient and effective operation (manufacturing or service provision) of the organization.

**Examples:**
- Office rent expense incurred to provide place for contact to customers and suppliers.
- Depreciation of office equipments used to record of transactions made by organization.
- Cleaning and maintenance of workplace to provide better working conditions to employee so that they can work efficiently.

2.1.3 Finance Overheads
Finance overheads are costs incurred on capital (money) rose for investment in resources, which are needed for administration of organization and manufacturing of products.
Examples:

Interest paid on bank loans, debentures, overdrafts etc.

Dividend paid to preference (redeemable) shareholders.

Dividend paid to equity (ordinary) shareholders against capital invested is not considered as finance overheads as they are proprietors (owners) of the organization.

3 Elements of Production Cost

3.1 Types of Production Costs

<table>
<thead>
<tr>
<th>Direct Cost</th>
<th>Indirect Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifiable to individual units of product or type of product or cost centre.</td>
<td>Non-identifiable to individual units of products or type of product or cost centre.</td>
</tr>
<tr>
<td>Example: Quantity of wood used in each chair.</td>
<td>Example: Depreciation of cutting machine.</td>
</tr>
<tr>
<td>Significant monetary value.</td>
<td>Insignificant monetary value</td>
</tr>
<tr>
<td>Example: Wood used in making can be of significant value.</td>
<td>Example: Nuts and bolts used in making chair can be of insignificant value.</td>
</tr>
<tr>
<td>Monetary value can be determined reasonably.</td>
<td>Monetary value cannot be determined reasonably.</td>
</tr>
<tr>
<td>Example: Reasonable monetary value of wood can be determined by multiplying price per kg of wood by its weight of wood used in each chair.</td>
<td>Example: Polished used in finishing of each chair cannot determined reasonably.</td>
</tr>
</tbody>
</table>

For cost to be classified as direct cost all the above conditions should be met. Indirect cost lacks one or more of the conditions required to be classified as direct cost.

Elements of Product cost are as follows:

3.2 Direct Materials (direct costs)
Material used in the manufacturing of products having properties of direct costs.
Example:

In car manufacturing, Quantity of iron used is direct material.

3.3 Direct Labour (direct costs)
Labour used in the manufacturing of products having properties of direct costs.

Skilled labour used in manufacturing of products are considered as direct labour.

Reasons:

They do work of specialized nature and can be indentified for each product separately.

They are paid higher wages and incur significant part of product cost.

Their cost is determined reasonably such as from payroll register.

3.4 Direct Expense
Direct expenses incurred in the manufacturing of a Product or operating a cost centre having properties of direct cost.

Examples:

Supervisor (foreman) salary expense incurred in construction of a building (product).

Salary of storekeeper to look after inventory in a warehouse (cost centre).

3.5 Production or Factory Overheads (F.O.H)
These are costs having properties of indirect costs.

These costs are incurred for the manufacturing of products in the production department.

Following are the components of factory overhead costs.

3.5.1 Indirect Materials
Indirect materials are the material costs having properties of indirect costs.

Example:

Amount of adhesive material used to join pieces wood in making chair.
3.5.2 Indirect Labour
Labour costs having properties of indirect costs.

Semi-skilled & unskilled Labours are considered indirect costs.

Reasons:
They do multiple jobs of general nature.

Example:
Handling material and providing tools to skilled Labours when needed.
They are paid relatively lower wages or salaries than skilled workers and unlikely to be form major part of product cost.
They may be temporary workers so formal records may not be present to determine its cost to the organization in exact monetary value.

3.5.3 Indirect Expenses
Indirect expenses are costs having properties of indirect cost.

They are not identifiable to individual products.

Example:
How it would be possible to identify factory rent expenses to each individual product?

They may or may not be of significant monetary value.

Example:
Oiling of delivery vehicles during routine maintenance.

Sufficient financial records may not be available.

Example:
It is usual in most organizations to group all small expenses into single account as sundry expenses. Therefore, value of each individual expense cannot be determined.
4. **Reason for Distinction b/w Production & Non Production Costs**

<table>
<thead>
<tr>
<th>Importance</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
<td>Distinction b/w production and non-production costs allow allocation of resources between resources needed for production and resources needed for undertaking operating (administration, selling &amp; distribution) activities.</td>
</tr>
<tr>
<td>Budgeting</td>
<td>It allows estimating production and non-production cost separately. Production cost usually changes with production and sales volume. Non-production cost such as administration cost usually changes with operating philosophy of the organization than production and sales volume.</td>
</tr>
</tbody>
</table>
Decision making | Pricing
--- | ---
It enables management to set product-selling price more rationally. Production costs which are directly identifiable to the products can be justified to customer where as non production costs are treated as period cost because it would be unfair to charge customers for administration and selling cost. They are cost to the organization itself.

Product mix | It allows finding appropriate product mix (combination of products) for production and sale by recognizing products according to the ability to incur operating cost to the organization. So that those products generating lower gross profit than operating cost incurred could be weeded out.

Control | Performance measurement
It enables senior management to held accountable operational managers for their area of responsibility such as production, sales, administration and finance etc.

Reporting | Financial reporting standards require separate disclosure of production and non-production cost. Separate information available for production and non-production cost help to discharge responsibly under financial reporting requirement.

5 Costs Behaviour
All the types of costs discussed above can have one or more of the following cost behaviours.

5.1 Variable Costs (Marginal Costs)
Variable costs change in proportion with change in the activity level (sales volume, units produced).

Example:
"Material cost will increase as each additional unit is made. If there is no production then there will be no material cost."

In theory it results in diagonal straight line when plotted on graph, but in practice this may not be the case because of economies of scale (bulk
purchase discounts) or diseconomies of scale (penalties for additional usage).

**Example:**
Supplier may offer 10% discount for each additional unit purchased after first 10,000 units. Taxable income above certain level is subject to higher tax rate.

**Diagram:**

5.2 Variable Costs per Unit
Variable costs per unit remain constant regardless of change in activity level.

**Example:**
Material cost per unit for 100th unit will be same material cost per unit for 1st unit.

In theory it results in horizontal straight line when plotted on graph, but in practice it is different because of economies of scale (bulk purchase discounts) or diseconomies of scale (penalties for additional usage).

**Example:**
Material cost per unit for 101th unit would be lower if supplier offers discount on each extra unit purchased after 100 units.
5.3 Fixed Costs

Fixed costs are costs, which remain constant regardless of change in activity level.

However, fixed costs only remain constant within limited range of activity level. Beyond that range, it may no longer be fixed.

It means fixed costs are fixed only in short-term. In the longer-term organization’s activity level may be different resulting in different fixed cost. Therefore, in the long term all costs have tendency to be variable.

**Example:**

*Opening of new retail shop due to increased sales demand for business products can give rise to additional rent expense. As a result, total fixed cost borne by the business will be increased.*

When plotted on graph, it gives horizontal straight line same as variable cost per unit.
5.4 Fixed Costs per Unit

Fixed costs per unit decrease with the increase in the activity level.

Reason is that, total fixed cost will be charged to more units of product (activity level) than before. As a result fixed costs per unit fall.

Example:

If budgeted fixed cost of $10,000 is divided by 10,000 units then fixed cost per unit will be equal to $1. However, if budgeted fixed cost of same $10,000 is divided by 20,000 units then fixed cost per unit will be equal to $0.5.
Diagram:

5.5 Step-Fixed Costs

Step-fixed costs are costs, which rise in steps. These costs remain constant within one range of activity level, and then increase suddenly in the next range of activity level.

In longer term, fixed costs tend to be step fixed.

Example:

In purchasing internet broadband connection, base package can be of $10 for 2 GB but if you exceed this limit, additional $12 can be charged from 2 GB to 5 GB.
5.6 Semi-Variable Costs
Semi-variable costs are costs, which have both variable and fixed elements.

Semi-variable costs start with certain amount of fixed cost, and then subsequent costs are variable cost.

Do not get confused to it with step-fixed cost. Step fixed costs does not necessary arise in proportion (linear fashion). While in semi-variable cost, variable part rises in proportion.

Example:
Landline telephone bills include line rent charges (fixed) regardless of usage of facility, but calls (variable) are charged say, S0.5 per call (proportion or linear fashion).
5.7 Total Cost
Total cost is the sum of all above costs. If it will involve fixed cost then it will be greater than zero at zero activity level.

6 High Low Method
It is used to split total cost and semi variable cost into its fixed and variable components.

To forecast total cost at given activity level.
Formula:

\[
\text{Variable cost per unit} = \frac{\text{Highest total cost} - \text{Lowest total cost}}{\text{Highest activity level} - \text{Lowest activity level}}
\]

\[
\text{Fixed cost} = \text{Total cost at highest A.L} - (\text{Highest A.L} \times \text{Variable cost per unit})
\]

\[
\text{Total cost} = \text{Fixed cost} + (\text{Forecast activity level} \times \text{Variable cost per unit})
\]

6.1 Applying High Low Method

Illustration

Following data relates to ABC plc.

<table>
<thead>
<tr>
<th>Production volume (activity level)</th>
<th>Total cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>10,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>12,000</td>
<td>$12,500</td>
</tr>
<tr>
<td>13,000</td>
<td>$13,200</td>
</tr>
<tr>
<td>11,000</td>
<td>$12,500</td>
</tr>
<tr>
<td>9,000</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

Required:
Calculate the fixed and variable components of the total cost.

Solution:
Identifying highest and lowest activity level as in this case is production volumes.

→ Highest production volume = 13,000 units.
→ Lowest production volume = 9,000 units.

Step 2:
Determining variable cost per units using highest and lowest production volume and corresponding costs.

\[
\text{Variable cost per unit} = \frac{\text{Highest total cost} - \text{Lowest total cost}}{\text{Highest activity level} - \text{Lowest activity level}}
\]

\[
\text{Variable cost per unis} = \frac{13,200 - 12,000}{13,000 - 9,000} = \frac{1,200}{4,000} = 0.3
\]
Step 3:
Determining fixed cost.

\[
Fixed\ cost = Total\ cost\ at\ highest\ A.L - (Highest\ A.L \times Variable\ cost\ per\ unit)
\]

\[
Fixed\ cost = $13,200 - (13,000 \times $0.3) = $9,300
\]

7 Structure of Linear Functions & Equations
7.1 Linear Relationship
Linear means straight. Linear line means straight line.

Similarly, linear relationship is the fashion in which variable increases or decreases resulting in the straight line if plotted on graph paper.

Example:

Sales volume 2,000, 4,000 and 6,000 units will result in a straight line if plotted on graph paper. The relationship between these numbers is linear.

Similarly, corresponding sales revenue of $2,000, $4,000 and $6,000 units if divided with sales volume will give selling price per unit of $1, $1 and $1 respectively at each sales volume level.

This can be said as linear relationship between sales volume and sales revenue because selling price per unit will result in a straight or linear line if plotted on graph paper.

7.2 Types of Linear Relationships
There are following types of relationship exists between variables, such as production volume (x) and total cost (y).

→ Direct or Positive Linear relationship.
→ Inverse or Negative Linear relationship.
→ Non-linear relationship.
→ Spurious Linear relationship (having linear relationship but do not have any meaning).
7.2.1 Direct Relationship

*Diagram:*

Increase or decrease in one variable leads to **increase** or decrease in other respectively.

7.2.2 Indirect Relationship

Increase or decrease in one variable leads to **decrease** or increase in other variable respectively.

*Diagram:*

7.2.3 Non-Linear Relationship

Co-ordinates of variables if plotted on graph paper do not result in straight line.
7.2.4 Spurious Relationship

Increase or decrease in one variable result in increase or decrease/decrease or increase in other variable respectively. However, variables are not responsible for the change in other.

Example:

Increase in birth rate and increase in national income both can increase and decrease at the same time. It does not mean that national income is responsible increased birth rate.

Similarly, increase in market demand for product and decrease in total cost can happen at the same time. It does not mean that increase in market demand is responsible for decrease in total cost.
## 8 Cost Units, Unit Costs, Cost Objects & Cost Centres

<table>
<thead>
<tr>
<th>Cost Units</th>
<th>Unit Costs</th>
<th>Cost Objects</th>
<th>Cost Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost unit is individual product for which cost is calculated.</td>
<td>Unit cost is measurement basis for product.</td>
<td>Cost objects are inputs used to make products.</td>
<td>Cost centre is department or area of the organization responsible for cost incurred.</td>
</tr>
</tbody>
</table>

**Example:**
- **Cost units for automobile company can be Car.**
- **Unit cost for Oil can be per litres**
- **Unit cost for metals can be per kg or pounds.**
- **Material (wood), Labour and overheads (electricity) used in making of chairs.**

## 9 Responsibility Centres

Responsibility centre are collective term for all below centres in an organization.

**Diagram:**

![Diagram of Responsibility Centres](image)

- **Investment centre (Head Office)**
- **Profit centre 1 (West branch)**
- **Profit centre 2 (East branch)**
- **Cost centre (Production)**
- **Revenue centre (Sales)**
- **Cost centre (Purchase)**
- **Revenue centre (Sales)**
9.1 Cost Centres
Cost centres are those functions or departments of the organization having an authority to **incur costs** within the limits of their authority and assume equal responsibility to account for those costs.

**Example:**
*Production department having authority to incur costs for producing products and having equally responsible to account for those costs.*

Similarly, marketing and research & development departments having authority to incur costs for product promotion and development respectively and having equally responsible for costs incurred within the limits of their authority.

9.2 Revenue Centres
Revenue centres are those functions or departments of an organization having an authority to **generate revenues** probably by selling products and are equally responsible to account for those revenues generated for the organization.

**Example:**
*Sales department having authority to incur costs for selling products and having equally responsible to account for those sales made.*

9.3 Profit Centres
Profit centres are autonomous subsidiaries, divisions and branches of an organization having authority to **generate profits** and are equally responsible to account for those profits.

**Example:**
*Organization may be dispersed in branches such as east and west branch in the country. Each branch has complete authority to set selling price and incur cost for goods or services according to local market conditions.*

Profit centres can include several cost and revenue centres.

Profit centres are higher in organizational hierarchy at tactical level, rather than cost and revenue centres which are at operational level in an organization.

All cost and revenue centres report to/from their respective profit centres.
Example (continued):

Each of the branch (profit centre) has their own sales (revenue centre) and production & marketing (cost centre) departments. These cost and revenue centres report on their performance to their respective branches.

9.4 Investment Centre

Investment centre are autonomous entity having authority to make investments and responsibility to account those investments.

It does not mean that other responsibility centres cannot make investments. They can, but their authority is limited to certain amount of investment.

Example:

Purchase of new printer by a branch.

Investment centre are usually head office of the organization where major investment decisions are made.

Example:

Purchase of new land, plant and taking over another organization.

Investment centre can include several profit centres.

Investment centre are highest in the hierarchy at strategic level.

All profit centres report to/from their respective profit centres.

Example:

A multi-national organization may have several subsidiaries across the globe. Each subsidiary (profit centre) depends for resources, such as products, machinery, money etc on head office (investment centre) in home country. These subsidiaries report on their performance to head office.
### 10 Information Needs of Responsibility Centres

<table>
<thead>
<tr>
<th>Cost centre</th>
<th>Revenue centre</th>
<th>Profit centre</th>
<th>Investment centre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost centres need detailed information for day-to-day decision-making purpose.</td>
<td>Revenue centres need detailed information for day-to-day decision-making purpose.</td>
<td>Profit centres need moderate information to be able to control performances of their cost and revenue centres.</td>
<td>Investment centres need brief information for major planning and controlling performances of their profit centres and cost and revenue centres.</td>
</tr>
<tr>
<td>Cost centres need frequent information on timely basis, such as on weakly, daily or unplanned basis.</td>
<td>Revenue centres need frequent information on timely basis, such as on weakly, daily or unplanned basis.</td>
<td>Profit centres need relatively moderately frequent information, such as on monthly basis.</td>
<td>Investment centres need least frequent information, such as on yearly basis.</td>
</tr>
<tr>
<td>Information would be on costs and production volume requirements.</td>
<td>Information would be on revenues and sales volume forecasts.</td>
<td>Information would be variance reports, such as on material wastage and machine breakdown.</td>
<td>Information would be financial and non-financial, such as on cash flow position and government policy on taxation.</td>
</tr>
</tbody>
</table>

### 11 Practice Questions & Solutions

#### 11.1 Question
In an organisation manufacturing a number of different products in one large factory, the rent of that factory is an example of a direct expense when costing a product.

Is this statement true or false? (1 mark)

- A. True
- B. False
Solution:
Correct answer is B.

Explanation:

In this case, cost object is a product rather than a factory. Rent expense relates to factory and factory is used to make more than one product. Therefore, amount of rent is not directly identifiable to the product. Therefore, it is not a direct cost for the product.

However, if factory is only used to make single product than we could identify rent expense as cost related to that type of product but rent expense will be still unidentifiable to number of units of that product.

11.2 Question
A manufacturing organisation incurs costs relating to the following:

(1) Commission payable to salespersons.
(2) Inspecting all products.
(3) Packing the products at the end of the manufacturing process prior to moving them to the warehouse.

Which of these costs are classified as production costs?

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

Solution:
Correct answer is C.

Explanation:

(1) Commission payable to sales person is obviously classified as selling cost.

(2) Inspection of products is done in production department. It is because inspection is part of production process. Inspection is made to check the quality of earlier production processes.
(3) Packing products is part of the product. Packaging adds value to the product just as main product itself. Therefore, it is considered as production cost.

11.3 Question (12/06, Q12): Which one of the following should be classified as indirect labour?

A. Assembly workers on a car production line
B. Bricklayers in a house building company
C. Machinists in a factory producing clothes
D. Forklift truck drivers in the stores of an engineering company.

Solution:
Correct answer is D.

Explanation:
A
Assembly is core activity in the manufacturing of cars. Cost of assembly work can be directly and reliably identifiable to each car.

B & C
Same reasons as above are applicable for bricklayers and machinists.

D
Forklift truck drivers are used in the stores department outside the production department. Stores department is established to facilitate efficient supply of raw materials for production and finished goods for selling. Therefore, salaries of forklift drivers cannot be directly identified to each product or department. Hence, it is classified as indirect labour cost.

11.4 Question (12/06, Q45)
A semi-variable cost is one that, in the short term, remains the same over a given range of activity but beyond that increases and then remains constant at the higher level of activity.

Is this statement true or false?

A. True
B. False
Solution:
Correct answer is B.

**Explanation:**

Semi variable cost has an element of both fixed and variable cost. Semi variable cost remains constant until it starts to change. Once it begins to change, it changes in proportion (straight line) with each additional unit increase in activity level.

The above statement represents the definition of step fixed cost rather than semi variable cost.

11.5 Question
Up to a given level of activity in each period, the purchase price per unit of a raw material is constant. After that point, a lower price per unit applies both to further units purchased and retrospectively to all units already purchased.

Which of the following graphs depicts the total cost of the raw materials for a period?
Solution:
Correct answer is D.

Explanation:

Broken line suggest subsequent fall in raw material cost since zero activity level after availing bulk purchase discount.

A
Cost of raw material is usually variable unless suppliers are contracted to supply particular quantity raw materials at regular intervals. Therefore, we will assume raw material cost as total variable cost in the absence of additional information.

B
Graph A does not represent raw material cost because after availing bulk purchase discount it does not decreases to zero at zero activity level.

Graph B does not represent raw material cost because it is not zero at zero activity level from beginning.

C
Graph C does not represent raw material cost because it does not reflect retrospective (cumulative) change in raw material cost after availing bulk purchase discount.

D
Graph D represent raw material cost because it reflects retrospective change in raw material cost after availing bulk purchase discount.

11.6 Question
For which of the following is a profit centre manager responsible?

A. Costs only
B. Revenues only
C. Costs and revenues.

Solution:
Correct answer is B.

Explanation:
Profit centre must be responsible for cost as well as revenues so that it can be held responsible for profits of the organization.
11.7 Question

The following statements relate to responsibility centres:

(1) Return on capital employed is a suitable measure of performance in both profit and investment centres.

(2) Cost centres are found in manufacturing organisations but not in service organisations.

(3) The manager of a revenue centre is responsible for both sales and costs in a part of an organisation.

Which of the statements, if any, is true?

A. 1 only  
B. 2 only  
C. 3 only  
D. None of them

Solution:
Correct answer is D.

Explanation:

(1) ROCE (return on capital employed) takes account of investment made by the organization. Therefore, profit centres performance should not be evaluated based on ROCE because it does not have 100% control over investments. ROCE is useful for evaluating performance of investment centre and their managers.

(2) Cost centre exists in both manufacturing organization as well as service organization.

Examples:

- Repair shop where mechanic repairs vehicles.
- Classroom in the school where professor delivers lectures.

(3) Manager of revenue centre is only responsible for sales. Revenue centre is different from profit centre. Later is responsible for revenues as well as costs.
Chapter 4:
PRESENTING INFORMATION

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Chapter 4: PRESENTING INFORMATION

1 Preparing & Representing Reports

1.1 Users of Reports
Management information reports are different from reports such as annual report, which are required for external reporting purpose.

Users of management information reports are internal to the organization. Management at different levels (strategic, tactical and operational) require information for planning, decision making and control purpose.

1.2 Purpose of Reports

<table>
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<th>Details</th>
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<tr>
<td>Planning</td>
<td>Planning requires both financial and non-financial information. Planning involves downwards communication from senior management to junior management. Senior management need to communicate plan to junior managers for effective implementation of plan.</td>
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<tr>
<td>Control</td>
<td>Control usually requires financial information such as variances. Control involves upwards communication from junior management to senior management. Senior management need information from junior management involved in day-to-day operations to be able to exercise control.</td>
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<tr>
<td>Decision making</td>
<td>Decision-making requires both financial and non-financial information. Decision-making requires the use of planning and control reports as well as reports on ad hoc (unplanned) basis according to opportunity or threat faced by management at different levels.</td>
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1.3 Content of Reports

1.3.1 To
Name of person being report is mentioned.

1.3.2 From
Name of person reporting is mentioned.

1.3.3 Date
Date represents the time at which report is written. However, date of receipt can be different from date it was written depending on the channel of communication (electronic, post etc) selected to send report.
1.3.4 Subject
Purpose of report is mentioned. It should be brief no more than one line so that reported person can quickly get an idea about the subject matter (topic) and urgency of action needed.

1.3.5 Introduction
Scope of report is mentioned. Introduction give brief description of information contain in the following report. Introduction should enable manager concerned to quickly get an overview of the report. It should be no more than three to four lines.

1.3.6 Body Text
Body text contains the detailed information. Body text may contain several headings and sub headings.

Headings should be descriptive and should enable manager to have an idea about the underlying information. Manager should be able to navigate to relevant information quickly.

Order of writing should be logical. It means it should present all necessary information at single place without requiring manager to move back and forth again and again. However, supporting information can be represented in appendix.

1.3.7 Appendix
Appendix contains all for supporting and related information in the body text. Appendix should be properly cross-referenced so that reader can quickly find information in appendix.

1.3.8 Authorization
Authorization is the signing of report before it is sent to the manager being reported. Authorization suggests the recipient that report is sent and reviewed by appropriate person.

2 Presenting Information Using Tables, Graphs & Charts
2.1 Tables
2.1.1 Benefits
Tables are cost effective and easy to present.

Tables are used to compare data and information.

Tables are used to analyse trend.

Tables are used to summaries information.
Tables save time as it avoids relabeling data and information each time they are presented.

2.1.2 Limitations
Tables have only two dimensions. Therefore, it can only accommodate only two variables.

Tables are not useful for explaining and discussing financial and non-financial issues.

Tables require the understanding of language to present and read.

2.2 Line Graphs

Diagram:

2.2.1 Benefits
Line graphs are time consuming to present manually.

Line graphs are also difficult to present manually. It requires artistic skill to draw neat and clean graph. However, spreadsheet programs such as Microsoft Excel or Lotus can do it automatically and cost effectively using data fed.

Line graphs are used to present data visually.

Line graphs can be used to graphically present the pattern of one variable due to increase or decrease in other variable.
Line graphs have three dimensions such as X, Y & Z axis. It can be used to present relationship up to three variables.

Line graphs can be used to show trends.

Line graphs also show extreme increase or decrease in variable.

Line graphs can accommodate more than one line so the performance of different entities (organizations or individuals) regarding same variable (for example, sales) could be compared.

2.2.2 Limitations
Line graphs cannot accommodate alphabetic data so there it cannot be used to present non-financial information.

Graphs require statistical knowledge to be read.

2.3 Scatter Graph
2.3.1 Benefits
Scatter graphs can be quickly drawn manually.

Scatter graphs can be used to find relationship (direct or indirect) between two variables.

Scatter graphs can be used to find trend (increasing or decreasing).

Scatter graphs are used for forecasting where accuracy is not necessary.

2.3.2 Limitations
Scatter graphs do not provide 100% accurate results. Line of best is drawn based on observation where majority of the coordinates can be joined using one straight line.

Graphs require statistical knowledge to be read.
2.4 Bar Charts

**Diagram:**

Bar charts can be used to present data visually.

Bar charts have two dimensions. Bar charts enable comparison of variable more accurately as it provides scale for measurement of variables along the vertical Y-axis. However, it can also present those variables along the horizontal X-axis.

**Example:**

Variables would be shown at X-axis and scales for measurement of variables would be shown at Y-axis.

Let sales revenue be the variable. Bar charts can be used to present sales revenue bar at each quarter during the year on X-axis and currency unit (Pounds) at Y-axis.

Bar charts can accommodate more detailed analysis of variable. Each variable can be assigned different colour.

**Example:**

Sales revenue generated by each product at each quarter during the year.

Similarly, bar charts can use more than one variable.
Example:
Bar charts can accommodate bars for sales revenue and cost of sales at each quarter during the year.

2.4.2 Limitations
Bar charts are not suitable for presenting trends.

Bar charts only show position of variable (sales) at particular interval such as Quarters. Bar charts do present movement in variables between two intervals.

Bar charts are time consuming to draw manually. However, spreadsheet software can quickly do it.

Bar charts cannot be used for forecasting purpose.

Graphs require statistical knowledge to be read.

2.5 Pie Charts

Diagram:

Sales Volume

Product A = Green
Product B = Yellow
Product C = Green

2.5.1 Benefits
Pie charts are used to present data and information visually.

Pie charts gives information in fraction. Fractions are understandable by non-financial managers easily.
Example:

Let sales volume be the variable. Pie chart can be used to present sales volume generated by each product.

2.5.2 Limitations
Pie charts have only one dimension. Therefore, it cannot accommodate more than one variable.

Pie charts do not provide 100% accurate information. It is because it provides visuals rather than numbers.

3 Interpreting Tables, Charts and Graphs
See the benefits and limitations of presenting tables, charts and graphs. If you know how to present them then you can interpret them too.

4 Practice Questions & Solutions
4.1 Question
A company’s sales in the last year in its three different markets were as follows

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<td>100,000</td>
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<tr>
<td>Market 2</td>
<td>150,000</td>
</tr>
<tr>
<td>Market 3</td>
<td>50,000</td>
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<td>Total</td>
<td>300,000</td>
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In a pie chart, representing the proportion of sales made by each region what would be the angle of the section representing Market 3?

A. 17 degrees  
B. 50 degrees  
C. 60 degrees  
D. 120 degrees

Solution:
Correct answer is C.

Explanation:
Pie chart is round in shape therefore it represent 360° degrees angle for total sales or 100% sales.

\[
Sales \% = \frac{50,000}{300,000} \times 100 = 60\% \text{ or degrees}
\]
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ACCOUNTING FOR MATERIALS

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