M. Com. (Previous) Semester-II

MANAGEMENT ACCOUNTING

Code No. 20MCO22C1

DIRECTORATE OF DISTANCE EDUCATION
MAHARSHI DAYANAND UNIVERSITY, ROHTAK
(A State University established under Haryana Act No. XXV of 1975)
NAAC 'A+' Grade Accredited University

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ROHTAK – 124 001

M.Com (Two Year Course) Semester -II
Management Accounting
Paper Code: 20MCO22C1

M. Marks = 100
Term End Examination = 80
Assignment = 20
Time = 3 hrs

Course Outcomes:

CO1: To communicate the major management accounting concepts related to functions of planning, directing, controlling and decision making.
CO2: To make the students able to use management accounting tools for pricing, budgetary control, cost allocation, and performance evaluation as well as the new developments in management accounting knowledge and technique and how to access cost-benefit analysis.
CO3: To evaluate the costs and benefits of different conventional and contemporary costing systems.
CO4: To understand the principles, types, centres, and problems of responsibility accounting and the role of a manager in the process of responsibility accounting.
CO5: To develop the ability among the students to collect, analyse and communicate quantitative and qualitative information to assist management in making effective planning and controlling.

Note: The examiner shall set nine questions in all covering the whole syllabus. Question No.1 will be compulsory covering all the units and shall carry 8 small questions of two marks each. The rest of the eight questions will be set from all the four units. The examiner will set two questions from each unit out of which the candidate shall attempt four questions selecting one question from each unit. All questions shall carry 16 marks each.

Unit-I Management Accounting-An Introduction: Nature & Scope, Financial Accounting vs. Cost Accounting vs. Management Accounting; Functions, Techniques, Principles; Scope; Utility; Limitations; Essentials for Success. Management Accountant: Position, Role and Responsibility;

Unit-II Budgetary Control: Managerial Control Process; Benefits; Limitations; Installation of the System; Classification of the Budgets; Preparation of different types of Budgets, Performance Budget and Zero-Base Budgeting. Lease Financing – Lease or buy decision; Evaluation of Lease methods

Unit-III Contemporary issues in Management-Accounting: Value Chain analysis; Activity Based Accounting; Quality Costing; Target and Life Cycle Costing.

Unit-IV Decisions Involving Alternate Choices: Cost Concepts Associated with Decision making; Evaluation Process; Specific Management Decisions – Make or buy; Expand or buy; Expand or Contract; Change vs. Status Quo; Retain or Replace; Exploring New Markets; Optimum Product Mix; Adding and Dropping a Product. Responsibility Accounting – Principles; Definition; Types of Responsibility Centers; Prerequisites; Utility; Problems. Reporting to Management- Steps for Effective Reporting; Requisites of Ideal Report; Types of Reports; Uses

Suggested Readings:-

1. J.K.Aggarwal, R.K.Aggarwal, M.L.Sharma – Accounting for Managerial Decisions – Ramesh Book Depot., Jaipur.
2. R.Kishore – Advance Management Accounting – Taxamn allied Services Pvt. Ltd.
3. M.Y.Khan, P.K.Jain – Management Accounting – Tata Mcgraw Hill.
4. Horngren, Sundem, Stratton – Introduction to Management Accounting - Pearson Education
5. S.N.Mittal – Accounting & Financial Management – Shree Mahavir Book Depot, Nai Sarak, New Delhi.
6. Anthony, Robat N., Hawkins and Merchant Management Accounting

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UNIT-1

Objectives of the Unit

- To understand the meaning of Management Accounting and its applications.
- To be familiar with the characteristics, uses, advantages, merits, functions, etc. of Management Accounting
- To gain better insight in to various aspects of Management Accounting
- To have knowledge of the concept of Management Accounting and its comparison with Financial Accounting and Cost Accounting
- To understand the role of Management Accountant for economic growth and development

Structure

1.1 Introduction
1.2 Meaning
1.3 Definition
1.4 Characteristics of Management Accounting
1.5 Principles of Management Accounting
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1.2 Limitations of Management Accounting
1.21 Management Accountant
1.22 Functions of Management Accountant
1.23 Questions for Practice

1.1 Introduction

In today's complex business environment a manager has to take timely and good decisions to lead the business into profits and by having competitive edge over its competitors, consolidates the financial positions of the business organization and in this way he not only runs the business efficiently and effectively but also fulfills the corporate social responsibility towards various stakeholders of the business such as owners, managers, employees, bankers, creditors, customers, Govt., and society, etc. The decisions can be good only if they are based on true, fair and timely information. If the decisions are not based on correct information or no information then there are chances of having them as wrong decisions. Hence every good organization has an information system to assist the management at different levels in decision making by providing information from various sources.

1.2 Meaning

Management Accounting which is also known as Accounting for Managers is a process of collecting information (both qualitative and quantitative) from various sources such as Financial Accounting, Cost Accounting, Tax Accounting, Human Resource Accounting, etc. selecting the important ones out of the total, analyzing them with the help of certain tools or techniques and then pass on to the management for taking decisions in the interest of the organization and the parties interested into it. Therefore it can be said that the Management Accounting is selective in nature where only important information are supplied to the management which have been collected from different sources. The management takes both routine and strategical decisions with the help of the information. Actually the Management Accounting works two ways – one the management is capable of knowing each and every thing about its organization, finds out the strong and weak points and accordingly takes decisions for grabbing the opportunities available to the organization in the external environment by facing the challenges and on the other hand the performance of the management can also be evaluated by various stakeholders during a particular time period by going through the financial statements of the organization.

1.3 Definition

The Management Accounting has been defined by various scholars/authorities from time to time. The following are some important definitions of Management Accounting:

- The Institute of Chartered Accountants of England and Wales. "Any form of accounting which enables a business to be conducted more efficiently can be regarded as Management Accounting".
- Anglo-American Council on Productivity. "Management Accounting is the presentation of accounting information in such a way as to assist management in the creation of policy and the day to day operation of any undertaking".
- R,N. Anthony. "Management Accounting is concerned with accounting information that is useful to management".
- J. Batty. "Management Accounting is the terms used to describe the account methods, systems and techniques which, coupled with special knowledge and ability, assist management in the task

of maximizing profits or minimizing losses".

- Chartered Institute of Management Accountants, London. "Management Accounting is the application of professional knowledge and skill in the preparation of accounting information in such a way as to assist management in the formation of policies and in the planning and control of the operations of the undertaking".
- Association of Certified and Corporate Accountants. "Management Accounting is the application of accounting and statistical techniques to the specified purpose of producing and interpreting information designed to assist management in its functions of promoting maximum efficiency and in envisaging, formulating and co-coordinating their execution".

1.4 Characteristics of Management Accounting

On the basis of the meaning and definitions, the following are the main characteristics of Management Accounting:

i) **Future Oriented**: Under Management Accounting various information from different sources are collected and passed on to the management to take decisions. The management decides the future courses of actions based on the information and try to attain the same by adopting various suitable controlling techniques such as marginal costing, standard costing and budgetary control system, etc.

ii) **Talent Based**: The concept of Management Accounting is totally based on the talent or abilities of management and no defined set rules/procedures are there to assist the managers. After analyzing the available information, the managers have to take decisions which are totally based on their personal experience, education, knowledge and wisdom.

iii) **Rationale behind Decisions**: When the decisions are taken by the management on the basis of information, the same is needed to be explained as to why and how these decisions are taken by giving suitable arguments and cause and effect relationship of the future outcomes.

iv) **Selective**: A lot of quantitative and qualitative information are collected under the process of Management Accounting but after the appropriate study of the same only a selective/important information are passed on to the concerned manager so that he/she may take appropriate decision in the interest of the organization. Therefore it can be said that all information collected are not used for taking decisions by the management.

v) **Means Not the End**: Under the concept of Management Accounting, the information are collected and supplied only by the Management Accountant to the management for taking timely and good decisions, therefore it is clear from the above that decisions are not provided to the management but only the required/important information. Hence Management Accounting is a means and not and end or substitute of the management.

vi) **Tools/Techniques**: After collecting the data from various sources, the management accountant uses various statistical tools/techniques to study the same and to select the information to be handed over to the managers for taking decisions.

vii) **Planning and Controlling**: Under Management Accounting the information are collected from various sources, analyzed and decisions are made for future to run the business effectively. To decide about the future course of action for the attainment of predetermined goals or objectives is known as planning. The decision are implement and actual performance is measured which is compared with the estimated performance. The differences/deviations are calculated and corrective measures are taken for the accomplishment of the objectives. Hence it can be said that Management Accounting helps not only in planning but also in controlling the business activities of an organization.

1.5 Principles of Management Accounting

Management Accounting is based on the following principles:

1. **Business Entity:** According to this principle, the business organization is a separate entity in comparison to its stakeholders like, owners, managers, workers, creditors, government, bankers and society, etc. and decisions are made for business only.
2. **Objectivity over Subjectivity:** It is thought that various statements and reports under Management Accounting are prepared objectively which are free from personal biases of individuals or managers. Hence, it works on the principle of objectivity over subjectivity.
3. **Permanency:** It is presumed under Management Accounting that the practices, procedures and methods, etc. will remain the same and generally no changes are made in them until it is necessary to do so for the sake of scientific comparisons and decision making. It is also known as the principle of consistency.
4. **Classification of costs:** This principle of Management Accounting divides the costs into normal and abnormal costs. The normal costs are bound to happen in every case but they need to be controlled. The abnormal costs are the costs which happen due to uncontrollable factors like, natural calamities, fire or theft, etc.
5. **Flexibility over Rigidity:** The methods or systems adopted under Management Accounting should be flexible which may be changed as per changed circumstances and not the rigid ones which become useless in alternate conditions.
6. **Surplus:** Under this principle of Management Accounting, the systems should be used only up to the extent they prove to be profitable for the organization. They should be abandoned or changed as soon as they become unprofitable for the business.
7. **Management by Exception:** It's a principle of control used by Management Accounting according to which the actual performance of individuals is compared with the targeted performance and if negative deviations are observed, the corrective or remedial actions are initiated. But in case of no deviation, no actions are recommended.
8. **Forward looking:** This principle of Management Accounting helps in making forecasts regarding the future of the firm and is tried to make it more efficient and profitable.

9. **Optimum use of resources:** This principle of Management Accounting ensures the best possible use of scarce available resources by controlling the wastages or leakages.
10. **Information:** This principle says that the information should be collected, analyzed, interpreted and presented to the management with the help of an authentic source having a minimum cost.
11. **Nature of costs:** This principle of Management Accounting underlines the need of differentiation between controllable and uncontrollable cost by the concerned managers.
12. **Principle of Prudence:** This principle is also known as the principle of conservatism where all future possible losses should be treated as the losses while all future possible gains or profits should not be considered until they are received. This principle helps in bringing about more efficiency in the organization.

1.6 Techniques or Tools of Management Accounting

The following are the main tools or techniques of Management Accounting:

1. **Common-size Statements:** Common-size statements are the statements under which the items of financial statements (Income Statement and Balance Sheet, etc.) are converted into percentage by taking a common base which is equal to 100. After that, percentage of individual items is calculated by dividing it by the total and multiplying by 100. For example, the cost of machinery in the Balance Sheet may be Rs. 1 lakh and the total of asset side Rs. 10 lakh, then machinery is 10 per cent of the total assets. In this way, various items of financial statement may be compared year-over-year through common-size statement.
2. **Comparative Statements:** Comparative Income Statement and Balance Sheet are prepared under Management Accounting to see the changes of items therein over a period of two years and increase or decrease is calculated in absolute terms and then in percentages; so that the management may note the changes and their impact on the financial position of the firm and make take the decisions accordingly.
3. **Ratio Analysis:** To study the financial statements seriously and systematically with the help of ratios is known as ratio-analysis. The profitability, financial position (short-term and long-term) and the pace of the business is ascertained with the help of profitability, Balance Sheet ratios and with the help of turnover ratios, respectively.
4. **Trend Analysis:** The possibility of happening or non-happening of something in the long-run is known as the trend and to study the same statistically is known as trend analysis. The trends may be increasing, decreasing, constant or fluctuating. The study of trend helps the management significantly in taking the decisions regarding the business organization.
5. **Cash Flow Statement:** It is a statement prepared in the end of the financial year to see the changes in cash position in between two dates (In the beginning and in the end of the financial year) by taking into consideration operating, financing and investing activities. The cash which is

thought to be the life blood of a business organization can better be managed with the help of cash flow statement.

6. **Funds Flow Statement:** It is a statement to be prepared in the end of the financial year to know the changes in working capital in between two dates (In the beginning and in the end of the financial year). It helps in the better management of working capital by observing the uses and applications of funds.

7. **Standard Costing:** It is a cost controlling technique where the standards (benchmarks) are fixed for various elements of cost (Material, labour and expenses), the same are implemented or executed and the actual performance is measured. Then the actual performance is compared with the standard performance and deviations/ changes/ differences are noted down which may be favourable or adverse and consequently the remedial actions are taken by the management for the better performance.

8. **Budgetary Control:** It is also a cost controlling technique adopted by Management Accounting where different business activities are controlled with the help of budgets. Under the technique, the budgets are prepared and implemented for different activities of the organization, actual performance is compared with the budgeted performance and deviations are noted down which may be favourable or adverse and consequently the corrective actions are taken by the management for the better performance.

9. **Marginal Costing:** Marginal costing is also a cost controlling technique which takes into consideration only the variable or marginal cost while taking decisions by the management. The fixed cost is put aside as non-controllable cost. The contribution is calculated by subtracting the variable cost from sales and break-even point is calculated with the help of the same by dividing fixed cost with contribution per unit or profit-volume ratio. Break-even point is a point of sales of a business where there is no profit no loss.

10. **Responsibility Accounting:** It is an important technique used by Management Accounting where the performance of management is accessed on the basis of the work assigned and the actual performance of the individuals. It helps in fixing the responsibility and accountability of individual manager which helps in increasing the overall efficiency of the organization.

1.7 Objectives/Uses/Merits/Purposes/Advantages of Management Accounting

When someone puts a question before you as why do you eat the food or what are the objectives/uses/Merits/Purposes/Advantages of eating the food, most probably your answer will be the same in every case. Hence when we have to give the objectives, uses, merits, purposes and advantages of Management Accounting, the same things are to be explained every time but definitely according to the language of the question. The following are the main Objectives/Uses/Merits/Purposes/Advantages of Management Accounting:

i) **Prompt and Good Decisions**: Any decision which is taken without having information may prove to be wrong but alternatively the decisions based on correct and timely information generally helps the organization in leading towards good directions. Since under Management Accounting information are collected from various sources and the important ones are sent to the managers for taking decisions. In this way it becomes easier for management in taking good and timely decisions by assessing the strong and weak points of their own organizations and threats and opportunities of the external environment.

ii) **Increase in Profits:** Under Management Accounting the relevant data from financial statements is collected, analyzed and interpreted to the management so that proper planning and control may be adopted at appropriate level of activity/activities to boost the profits of the organizations which is the ultimate objective of an organization.

iii) **Strong Financial Position:** Through Management Accounting it is possible to enhance the financial position of the business organization in the form of sound capital based, surged reserve and surplus, etc. by controlling or avoiding the wasteful activities.

iv) **Cost Control:** The success of any business organization depends on the cost control up to a great extent and it is the Management Accounting which helps in doing the same by providing correct and timely information regarding various business activities and hence by adopting a judicious planning and controlling system, the leakages/wastages are reduced to the minimum which helps in increasing the net income of the organization.

v) **Competitive Selling Price:** Since the Management Accounting helps in controlling the cost of goods or services of the organization by having a better control on various elements of costs such as material, labour and expenses consequently the total cost of the products remains at low and therefore it is easy and comfortable to decide a low selling price by adding sufficient profits to the cost in comparison to the products of competitors.

vi) **More Revenue Generation:** It is the law of demand which says that the demand of the product increases having low selling price and vice-versa. It is possible for the business organization to keep the selling price at low level in comparison to its competitors by adopting the technique of Management Accounting which helps in increasing the sales of the organization resulting into the more revenue generation.

vii) **Expansion and Modernization:** The cost control with the help of Management Accounting results into high revenue generation and profits. It gradually consolidates the financial position of the business organization with enlarged capital based. With the availability of surplus funds in the hands of the organization it becomes easy to expand the business activities by adopting latest technology. The concept can easily be understood by taking example of Maruti Udyog Ltd. which started its operations by producing a single car (Maruti

800) during 1980s and now it has diversified its activities with latest technology and having variety of products. It is India's largest Car Manufacturer and Leader in the area now a day.

viii) **More Employment Generation:** The profit making organizations are bound to be strong financially over the period of time as explained earlier. It further leads to the expansion and modernization where more manpower is needed by the organization to cope with the enhanced capacity. Therefore more employees are added to the existing strength of the human resource of the organization. In this way it is clear that by adopting Management Accounting system we can generate more employment opportunities in the economy.

ix) **Helps in Removing Poverty:** By creating more demand for human resource through increased economic activities, employment opportunities are created which result into elevation of the poverty from the economy. Therefore the Management Accounting technique is a great help in resolving the issue of poverty through expansion of business activities.

x) **Better Standards of Living:** It is evident from the above discussion that the Management Accounting not only helps in removing of poverty but also helps in generating employment opportunities which ultimately helps the people around to have better food, clothing and housing facilities. In this way the standard of living of the society improves significantly.

xi) **Overall Economic Growth and Development:** It is definite that more and more organizations are adopting globally the concept of Management Accounting for last couple of decades due to the merits of the system which result into several benefits such as reduced cost, increased revenues/profits, a better financial position, expansion of business activities, etc. Therefore it can safely be said that it is the Management Accounting technique which helps substantially in increasing the economic activities of the respective organizations and consequently the respective economy in which such type of organizations are operating.

xii) **Proper Utilization of Resources:** The resources of the organization are always scares which are never to be wasted or misutilized for the sake of the good health of the organization. It is the Management Accounting technique which ensures the best possible use of limited resources by controlling the undesired activities or wastages.

xiii) **Increases the Efficiency:** To do or perform a task or work in the best possible manner with the help of the available resources is known as efficiency. It is the Management Accounting which ensures better efficiency by providing legitimate and timely information clubbed with suitable statistical techniques and hence helping in taking good decisions at different levels of management.

xiv) **Enhanced Goodwill:** The goodwill is the good name and fame of a business organization which is earned through efficient and effective business operations which lead the business into profits and sound financial position. The Management Accounting helps the management in doing so and hence result into the increase in the goodwill of the organization.

xv) **Consumer Satisfaction:** A consumer feels more satisfied if he gets the products or services of his choice at reasonable price and having good quality. The modern business organizations are doing the same with the help of Management Accounting to satisfy their customers.

xvi) **Cooperation and Coordination:** The management accountant reports the strong and weak points of the organization to the management at various levels. If there is lack of cooperation and coordination among the employees or activities of the organization, the same may be rectified by introducing the revised concept of cooperation and coordination.

xvii) **Better Communication:** With the help of the information received from the management accountant, the management may take decisions regarding better communication among employees sitting at various levels, if it is needed to do so, in general interest of the organization by removing various bottlenecks in the way of effective communication.

1.8 Scope of Management Accounting

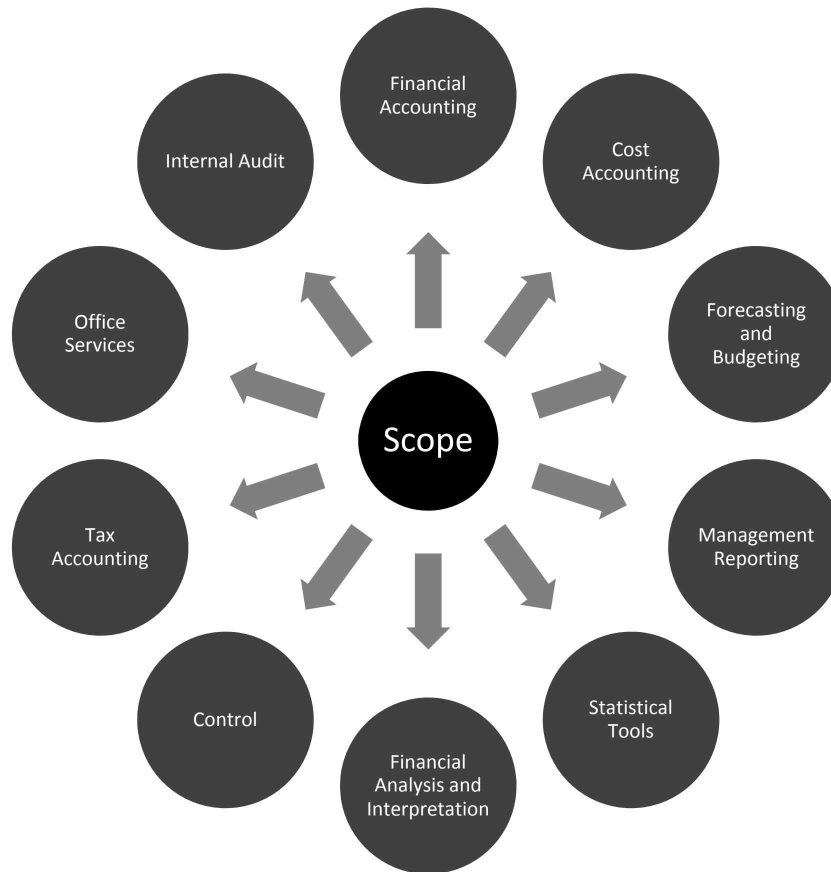
Scope covers the area of operations for performing a particular task. As under Management Accounting the management accountant has to gather the quantitative and qualitative information from various sources which further enables him in selecting the important ones to be sent to the management for making appropriate decisions. All the sources from where such information is collected constitute the scope of the Management Accounting which includes the following:

i) **Financial Accounting:** The financial accounting is a process of identifying, recording, classifying, summarizing, analyzing and interpreting the financial results of a business organization. It is also known as art and science. Under financial accounting, the financial statements in the form of income statements, financial statements, etc. are prepared to impart various information to different stakeholders of the business organization and which are duly audited and certified by the auditor of the concern. Therefore, the important information is derived from the financial accounting for the help of the management.

ii) **Cost Accounting:** The cost accounting is a process of calculating cost of goods or services by using different methods or techniques. It determines the total cost of the product and the selling price by adding sufficient profit into it. It also includes the cost controlling techniques such as budgetary control, marginal costing, standard costing, etc. The management accountant collects information from the cost accounting from time to time and supplies the same to the management.

iii) **Budgeting and Forecasting:** Budgeting is a process of preparing budgets by taking various steps for the attainment of predetermined objectives while forecasting is an

Scope of Management Accounting



estimation regarding long future for making assessment of future opportunities and threats available for the organization. The management accountant derives information out of budgeting and forecasting from time to time which he thinks are important for the organization and decisions are required to be made in this respect by the management.

iv) **Management Reporting System:** It is a system which is adopted and implemented by modern organizations these days for free and prompt information sharing so that the required updating is brought about and the management get ready to transform the organization and its structure to cope with the changes in the internal and external environments. The management accountant also takes help of Management Reporting System to have information for the managers.

v) **Tax Accounting:** Every business organization has tax liabilities which are calculated, planned and paid from time to time. The tax laws have a tendency of fast changes year or year due to tax authorities or the concerned Govt. The management accountant derives information from tax accounting system for managers so that they can take appropriate decisions for tax planning and controlling.

vi) **Human Resource Accounting:** It is that branch of accounting which maintains records of the employees/human resource of an organization right from the date of their joining the organization and up to their retirement/death/leaving the organization. Every aspect regarding the employees is taken care of such as the wages or salaries paid to them, expenses incurred on their training, growth and development, the value of human resource based on their expertise, knowledge and talent, etc. As the human resource is the most important resource of any organization, therefore by having information regarding the same the management can make better plans regarding its utilization for the benefit of the organization.

vii) **Financial Analysis:** The data collected from various sources are studied with the help of appropriate statistical techniques such as mean, mode, median, CAGR, Ratios, common size statements, trends, break-even point, etc. so as to draw the conclusions for further decisions making. The results so derived are also presented with the help of graphs, diagrams, etc. to make them more understandable.

viii) **Interpretation:** Interpretation is the expression of financial results in simple language which are derived after making the analysis of financial statements to the various stakeholders including the management. After having the simple explanation regarding a problem or results the management may take corrective actions for vaulting the performance of the organization.

ix) **Audit:** The financial statements (Income Statement and Balance Sheet, etc.) of the organization are checked and verified by the auditors and they issue the certificate regarding their true and fair nature. In this way the authentic information can be had from the financial statements for making decisions.

x) **Internet/Print Media:** These days a lot of information are taken from the internet or print media regarding the latest developments in business or economic environment of a country and hence it helps the management in taking the appropriate decisions to cope up with the changing environment.

1.9 Meaning of Financial Accounting

Financial Accounting is a process of identifying, recording, classifying, summarizing, analyzing and interpreting the financial results of a business organization. It is also known as art and science.

1.10 Meaning of Art

To do/perform something (task, activity, work, etc.) in the best possible manner by applying theoretical knowledge into practical

1.11 Meaning of Science

Science is a systemized knowledge based on certain principles which explain the cause and effect relationship and are universally testable /applicable.

1.12 Features/Characteristics of Accounting

1. **Recording of Financial transactions:** there may be two types of transactions- qualitative and quantitative. Since, the qualitative transactions or events are not measurable in to the terms of money; therefore, they are not recorded under accounting for example, honesty, dishonesty,

loyalty, hard working, etc. They affect the business environment and the performance but as they cannot be measured, they find no place in the books of accounts. On the other hand, the transactions which can be measured in terms of money such as, purchase or sales of goods or assets, payments of expenses, receipt of incomes, etc. are recorded into the books of accounts.

2. **Recording is based on certain principles:** The recording of monetary business transactions is made on the basis of principles of double entry system throughout the globe. The transactions are classified into personal, real and nominal accounts and are recorded on the basis of rules framed for each type of accounts under the system. They are recorded date-wise and systematically.
3. **Classification:** the recorded transactions in the books of original entry (Journal) are posted to ledger accounts (Ledger) on the basis of their individual nature. In this way, different accounts are prepared to know the exact balances to/from be paid or received from various parties of the business organization.
4. **Summary:** Under accounting, in the end of the financial year a summary is prepared in the form of financial statements (Income Statement, Balance Sheet, etc) to know the profitability, short-term and long-term financial position and other important information regarding business organization.
5. **Analysis:** After the preparation of summary of financial transactions in the form of financial statements, the same (financial statements) are studied seriously and systematically with the help of certain tools or techniques so as to reach on certain results or conclusions, is known as financial analysis which is an integral part of financial accounting.
6. **Interpretation of results:** After making analysis by the financial analyst of the financial statements, the results are expressed in simple language to the various stakeholders of the business organization so that after having the related information they make take their own decisions to protect their individual interests.
7. **Accounting is an Art:** Under accounting, the business records and books are maintained in such a manner so that the business results may be found out accurately without any problem or mistake. To do something in the best possible manner by theoretical knowledge into practical is known as art and because same is applied in doing accounting therefore, it is said that accounting is an art.
8. **Accounting is science:** Science is a systematized knowledge based on certain principles which explain the relationship between cause and effect and are universally applicable and acceptable. Similarly, the accounting is also a systematized knowledge based on the principles of double entry system which are applicable and accepted universally; hence, it can safely be said that accounting is a science also.

1.13 Advantages/ Objectives/Functions/ Merits/ Uses of Accounting

The following are the various uses/ advantages/ objectives/ merits of accounting

1. **Complete and systematic records:** First of all, the financial transactions of a business organization are identified and then recorded into the books of accounts systematically. In this

way, a complete record of all the financial transactions is prepared completely with all sorts of awareness and same provide the basis for running the business properly without committing mistakes.

2. **Ascertainment of profit or loss:** The profit or losses are the main indicators of success or failure of the business organization. Therefore, they are calculated by every business organization regularly without failure. It is the second important function og accounting to calculate the profit or loss of the business organization by preparing a summary of business transactions in the form of Profit and Loss Account or Income Statement and the same is shared with various parties interested in a business organization as an important information.
3. **Finding out the financial position:** Accounting performs another important function by finding out the short-term and long-term financial position of a business organization by preparing Balance Sheet in the end of every financial year and the same is communicated as important information to various stakeholders.
4. **Detection of errors/ mistakes:** Under financial accounting, a statement is prepared with the help of the balances of different types of accounts in the end of the financial year which is known as Trial Balance to detect different types of mathematical errors, if any. In this way, it scans the accounts to purify them.
5. **Provides information to stakeholders:** It is one more important function of accounting to prepare information and imparting the same with various stakeholders (owners, managers, employees, customers, bankers, competitors, government, society, etc.) of the business organization to fulfil their respective requirements of having the same.
6. **Helps in decision making:** The management is responsible for taking decisions and running the business into profits with a sound financial position. The decisions are thought to be better and rationalized if they are based on the correct and timely information. The accounting system provides the same to the management and helps them in taking good and timely decisions to run the business smoothly.
7. **Legal formalities:** Under the provisions of various acts of a particular nation, all sorts of business organizations (particularly registered ones) are to prepare the books of accounts legally and have to get them audited and further the important information in the form of annual reports are submitted with the competent authorities as compliance of the law.

1.14 Limitations of Accounting

The accounting is having certain limitations, which are as follows:

1. **Personal Biases:** The principles of accounting are not so pure as they are in case of exact sciences (Physics, Chemistry, etc) and hence, there remains a scope of making judgment by a person to introduce his own views into the system and hence, the results are affected as per his will which defeats the purpose of having pure accounting information on the basis of which the planning and decisions are to be made for the proper functioning of the organization.

2. **Application of concepts and conventions:** The accounting system is based on various concepts and conventions which compel the accountants to present the things as per their requirements which sometimes mislead the person who is having the information under the accounting system for example, the assets are shown in the Balance Sheet at their book value and not at their market value as per the requirement of going concern concept.

3. **Incomplete in nature:** The accounting system deals only with the financial transactions which are measurable into the terms of money but never takes into consideration the work environment, value system, honesty, dishonesty, loyalty and hardworking of employees and shirking of work, etc. which affects the performance of the organization up to a great extent but, they are of qualitative nature and hence, never become a part of the accounting system which remain incomplete in this way.

4. **Historical Cost:** The accounting system records only the original cost of the assets and the same are depicted through the financial statements which may mislead the users of financial statements n making decisions.

5. **Window dressing:** Sometimes, the accounts in the form of financial statements are changed or fabricated purposefully to show-off the profitability or financial position better though actually it is not to have the favor from the various stakeholders by misinforming them as was done several years back by Satyam Computers Ltd. In India.

1.15 Meaning of Cost Accounting

The cost accounting is a process of calculating cost of goods or services by using different methods or techniques. It determines the total cost of the product and the selling price by adding sufficient profit into it. It also includes the cost controlling techniques such as budgetary control, marginal costing, standard costing, etc.

1.16 Objectives/Advantages/Uses/Functions of Cost Accounting

1. **Helps in finding out cost of production:** Under cost accounting, we prepare cost sheet to find out different types of costs such as, prime cost, works cost, cost of production and total cost, etc. and by dividing the above said costs by the number of units produced, we are able to find out the cost per unit.

2. **Determination of selling price:** It is easy to fix the selling price if we have the total cost of the goods or services produced by an organization by adding into it the reasonable profit as per the circumstances. In this way, the cost accounting helps the management in the determination of selling price of goods or services.

3. **Cost control:** To control the cost of goods or services produced by an organization one must have details regarding the elements of cost and their uses. There are cost accounting techniques such as, budgetary control system, standard costing and marginal costing, etc which help the management in controlling the cost of the products.

4. **Decision making:** The decisions are bound to be good if they are based on true and fair information. The cost accounting system provides the necessary information to the management from time-to-time which helps the management in taking good and timely decisions in the interest of the organization.
5. **Framing policies:** The accounting information derived from the cost accounting system helps the management in framing and reframing the production policies which serve as the guidelines for the management and the workers for the better performance.
6. **Strong and weak points:** By maintaining a cost accounting system, the management is capable of having information regarding the strong and weak points of the organization and by controlling the weak points and improving the strong ones, they are able to control the wastages and high costs of products and consequently able to produce good quality products at cheaper rates.
7. **Better allocation of resources:** The resources are always scare and are not to be wasted. The management can ensure the optimum use of resources by using cost accounting system.
8. **Profitability and financial position:** By controlling the cost and optimum use of resources through cost accounting system, the management is able to increase the profits of a business organization year-over-year which also helps in the consolidation of the financial position of the business organization in long-run.

1.17 Difference between Financial Accounting and Management Accounting

Basis of difference	Financial Accounting	Management Accounting
Approach	It adopts the backward looking approach i.e. focuses on past events or activities	It adopts the forward looking approach i.e. focuses on the projection for future events or activities
Users	Here information are intended to assist outside users such as shareholders, government, creditors, etc.	Here information are meant for insiders i.e. management, owners, etc.
Static	It provides a static picture of the organisational activities	It provides a non-static view of the organisational activities
Structure	There is defined structure for reporting financial information	There is no defined format for reporting management information. Format varies with the usage of management information.
Performance	It provides information of whole organisation	It provides information of particular product/segment/business/department.
Criterion	Here information is meant to be fair and true	Here information is meant to be useful for management in making decision
Compulsory	Reporting of financial information is	Reporting of management information

	mandatory under the statute	is completely optional. There is no statutory obligation
Promptness	There is no urgency of reporting financial information	Prompt reporting is required for taking timely decision
Rules framers	Outside body regulate the reporting of financial information through enactment of laws and issuance of rules and regulations	Management formulates rules that fit its needs/pre-requisite
Content nature	It reports information of monetary nature	It reports information of monetary as well as non-monetary nature
Users	Here users are large and diverse	Here users size is small
Regulations	Financial information is communicated through financial statement by following GAAP	There are no such principles and rules that govern reporting of management information
Frequency of reporting	Here reporting is quarterly and annually	Here reporting frequency varies with requirement of management
Precision of information	Information is accurate and precise, under the financial accounting	There are many approximation in Management Accounting

1.18 Difference between Management Accounting and Cost Accounting

Management Accounting	**Cost Accounting**
It developed due to the limitations of the Cost Accounting	It developed due to the limitations of the financial accounting
Its scope is broader than Cost Accounting	Its scope is narrow than Management Accounting
It gets its information from Cost Accounting and Financial Accounting, etc.	It get its information from Financial Accounting
It involves short-term as well as long-term planning decisions	It only involves short-term planning decisions

1.19 Pre-requisites of Successful Management Accounting System

The following are the preconditions to be adopted by an organization to make the Management Accounting a success;

i) **Team Work**: The persons who are the part of the team of management accountant in performing the Management Accounting must have a feeling of cooperation, help, and faith among all for having better results.

ii) **Well Expressed Objectives and Policies**: The objectives and policies of the organization must be well defined and communicated to each member of the organization for the better implementation of the plans and easy accomplishment of organizational objectives.

iii) **Effective Accounting System**: As most of the information is collected by management accountant from the accounting system of the organization itself hence the accounting system must be well maintained and sound this may provide authentic and timely information for better decision making.

iv) **Humanity**: The men should be treated as human beings by the management in the organization who are performing the act of Management Accounting and not the machines. Their feelings sentiments, suggestions, complaints, incentives, motivates, etc. should be taken care of always for having good results.

v) **Sound Management Reporting System**: Under Management Accounting important information are collected and shared continuously by the management accountant. If the management information system is good and having sufficient infrastructural facilities then better results are expected in comparison to the system having flaws.

vi) **Forward Looking**: It is necessary to have a foresightedness forward looking approach of the management capable of scanning and analyzing the business environment for a successful Management Accounting system.

vii) **Performance Appraisal**: The work done by the management accountant and his team must continuously be appraised from time to time to have better results.

1.20 Limitations of Management Accounting

Limitations do not mean necessarily the disadvantages of something but they are the limits beyond which that system will not be operating. The following are the main limitations of the Management Accounting:

i) **Wide Scope**: Since the Management Accounting gathers information from many sources such as financial accounting, cost accounting, tax accounting, statistics, sociology, psychology, etc. which is a very big area. To have insight and such a big area and to understand it is a difficult task for anyone. Therefore some times, some information may be missing due to the lack of knowledge on the part of the management accountant.

ii) **Emerging Area**: The Management Accounting is comparatively en emerging area of management where there is a possibility of introduction of new approach, new or modified principles and procedures, etc. Hence it can be said that there is a further scope of Management Accounting in the times to come and it has not yet been exploited fully.

iii) **Change in the Organization**: It is necessary to make required changes for adopting Management Accounting in an organization which are generally opposed by its employees as per the human nature. This attitude of employees is to be tackled with very carefully while implementing the concept of Management Accounting.

iv) **Expensive**: To adopt and implement the Management Accounting system is costly affair as requires a team of experts with necessary equipment in form of technology. Therefore small organizations can not adopt it due to small budget.

v) **Personal Bias**: Sometimes the persons working under the Management Accounting system do not follow the rules or results of the analysis made with the help of statistical tools and take decisions on the basis of their personal whims and judgment but putting aside the principles of management which may affect adversely the fortunes of the organization.

vi) **Not a substitute of Management**: The Management Accounting is a tool used by management in making better decisions which should not be confused as a substitute of management.

1.21 Management Accountant

The management accountant or the management controller or comptroller is a senior executive of an organization and is the head of the Management Accounting team. He is responsible for collecting information from within and outside the business organization which are analyzed further and the concrete results are shared with the management to take prompt and timely decisions for the growth and development of the organization.

1.22 Functions of Management Accountant

- Collection of data.
- Transcribing the collected data to make it more meaningful.
- Analyzing the data with appropriate techniques.
- Interpretation of results.
- Preparation of Reports.
- Sharing the reports with management.

1.23 Questions for Practice

Short Answer Type Questions

1. What do you understand by Management Accounting?
2. Explain the scope of Management Accounting.
3. What are the functions of Management Accounting?
4. Elucidate the functions of management accountant?
5. Define the objectives of Management Accounting.
6. Outline the limitations of Management Accounting.

Long Answer Type Questions

1. Elucidate the meaning, scope, objectives and limitations of Management Accounting.
2. "Management Accounting is the presentation of accounting information in such a way as to help the management in the creation of policy and in the day to day operation of the concern", explain this statement.
3. "The past is history, the future is planning." Explain this quotation from the point of view of management.
4. Explain various tool and techniques of Management Accounting and also give its advantages.

5. What are the role and responsibilities of management accountant?
6. What do you understand by Management Accounting? What are the difference among Management Accounting

Suggested Readings:-

1. J.K. Aggarwal, R.K. Aggarwal, M.L. Sharma – Accounting for Managerial Decisions– Ramesh Book Depot, Jaipur.
2. R. Kishore–Advance Management Accounting–Taxman allied Services Pvt. Ltd.
3. M.Y. Khan, P.K. Jain–Management Accounting–Tata McGraw Hill
4. Horngren, Sundem, Stratton–Introduction to Management Accounting-Pearson Education
5. S.N. Mittal–Accounting & Financial Management – Shree Mahavir Book Depot, Nai Sarak, New Delhi.
6. Anthony, Robat N., Hawkins and Merchant Management Ac.

UNIT-2

Budgetary Control

Objectives of the Unit

- To understand the meaning of budget- its types, budgeting, process of budgeting, etc.
- To know the meaning of budgetary control system, its features, process, advantages and limitations.
- To provide knowledge about zero base budgeting- its advantages and disadvantages, methods of preparing various types of budgets.
- To disseminate the concept of lease financing and the related facts to be used by different organisations in modern times

Structure

2.1	Meaning of Budget
2.2	Features/characteristics of Budget
2.3	Meaning of Budgeting
2.4	Meaning of Budgetary control
2.5	Objectives/benefits/advantages/uses/significance of Budgetary Control
2.6	Pre-requisites of successful budgeting
2.7	Limitations of Budgetary Control System
2.8	Types of budgets
2.9	Zero base budgeting
2.1	Procedure of setting up Zero base budgeting
2.11	Advantages
2.12	Disadvantages
2.13	Lease Financing
2.14	Features/characteristics of Lease
2.15	Types of lease
2.16	Difference between finance and operating lease
2.17	Determination of Lease Rentals
2.18	Financial evaluation from lessors' point of view
2.19	Financial evaluation from lessees' point of view
2.20	Benefits/advantages of Lease
2.21	Disadvantages
2.22	Questions for Practice

Introduction

In today's complex business environment a good planning plays a significant role in growth development of an organization. When the plan is converted into numerical terms for setting individual and organizational goals it is known as a Budget. Further, when the business activities are controlled with the help of budgets for the attainment of predetermined goals and objectives, it is known as Budgeted Control System. A good Budgetary Control System helps in reducing the cost by avoiding unnecessary activities and hence results into increased profits of the business organization.

2.1 Meaning of Budget

When the plans of business organisation are expressed numerically or quantitatively it is known as budget. Since, the resources are always scares hence they are to be used judiciously by the management for attaining the predetermined goals or objectives. A budget helps in doing so by allocating resources to various activities of an organisation.

2.2 Features/Characteristics of Budget:

1. Budget is prepared for the attainment of specific objective.
2. Budget is prepared for a definite future period, for example, for a month, quarter, half year, a year or more.
3. It is prepared well in advance before the commencement of the period for which it is prepared.
4. It is sort of statement expressed numerically/quantitatively and is based on plans of the organization.
5. A budget is prepared by a budget committee.
6. A budget represents the managerial policies to be adopted and implemented by the organization.

2.3 Meaning of Budgeting

The process of preparing budgets by taking various steps is known as budgeting. While budgeting, a budget manual (a bundle of budget policies) is prepared having details regarding the budget to be prepared, a budget controller (budget director or budget officer) is appointed for the purpose and a budget committee is constituted under his chairmanship having members from various departments of the organisation. Sometime outside experts are also appointed as members of budget committee, if needed. The budget period, procedure and key factors are also considered while budgeting.

2.4 Meaning of Budgetary control

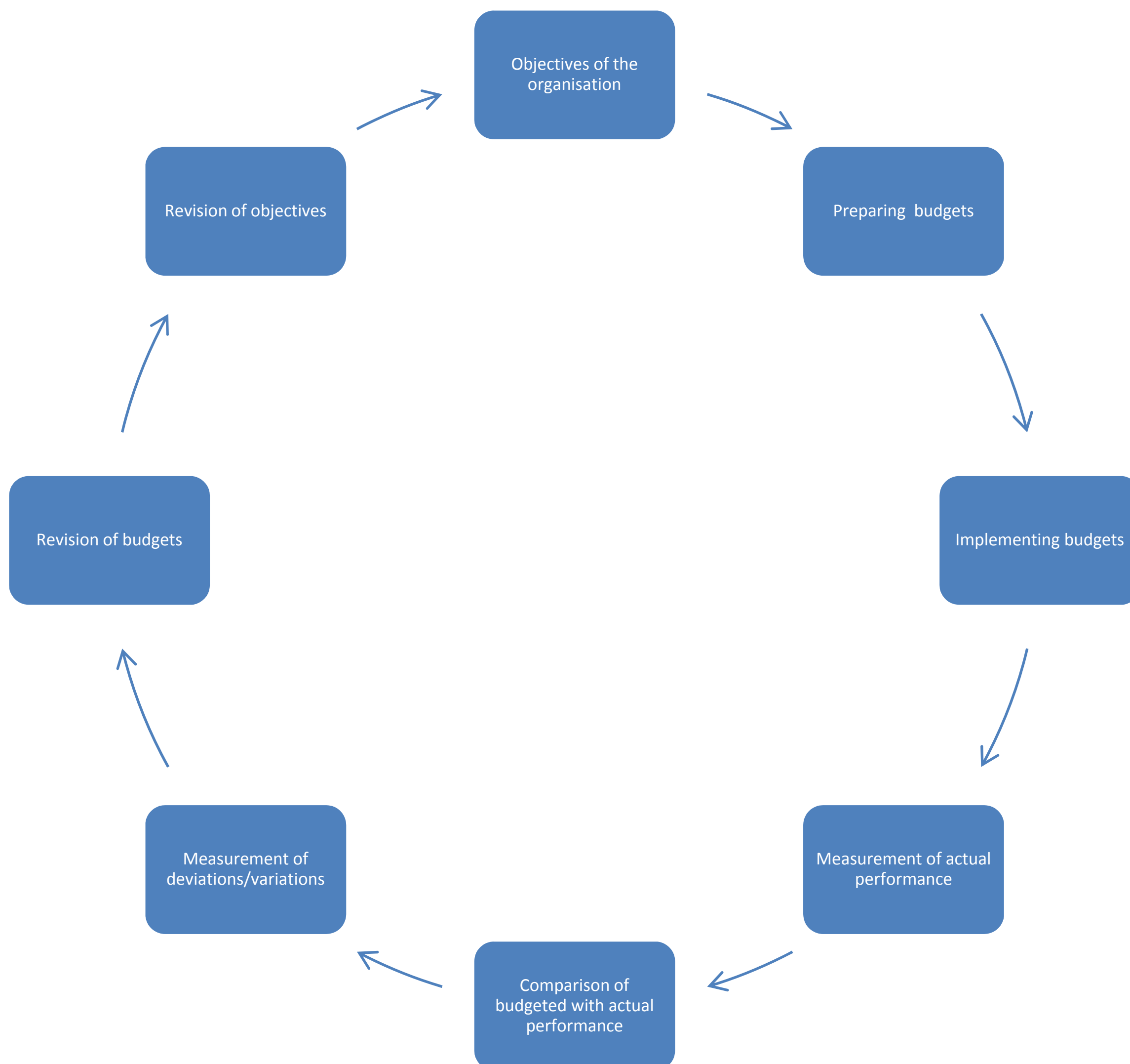
When the business activities are controlled by the management with the help of budgets for the attainment of predetermined objectives of the organisation, it is known as budgetary control/budgetary control system. Under the system, first the budgets are prepared and implemented by the management, actual performance is measured and deviation/ differences with the budgeted performance are calculated and consequently the remedial actions are initiated/ taken for the betterment.

2.5 Objectives/benefits/advantages/uses/significance of Budgetary Control

If someone asks you as why do you wear clothes? Probably you will give the same answer but with different words which suit the language of the question. Hence, when we talk about the objectives/benefits/ you wear clothes or what are the objectives/benefits/advantages/uses/significance advantages/uses/significance of budgetary control the answer will be the same one but by moulding the words as per the language of the questions and the same may be summarized as follows:

1. **Effective planning and fixation of objectives:** It is possible with the budgetary control system to identify and study various types of problems with which the organization is confronting with and consequently the future courses of action in the form of effective planning are possible to be adopted. Similarly, the budgetary control system points out strong and weak points of the organization therefore it is easy to set the objectives for the organization with the help of it.

Figure 2.1 Objectives of Budgetary Control



2. **Better co-ordination:** An organization becomes capable of adopting better coordination among various types of activities performed by it for the accomplishment of individual/departmental/organizational goals by learning through experiences of budgetary control system which helps in increasing the efficiency of overall organization.

3. **Better utilization of resources:** Limited resources of the organization are allocated judiciously under budgetary control by taking into considerations various types of activities to be performed by different departments for attaining the overall objectives of the organization. In this way, the best use of available resources is made by the management and the individual goals are clearly defined for the use of the same.

4. **Cost control:** Under the system, utmost care is given for the best utilization of resources and consequently attaining the personal and organizational goals as per the budgeted targets. The actual performance is to be compared with budgeted performance and accountability of individuals may be fixed easily, therefore, especial attention is given towards the cost control which ultimately increases the efficiency and effectiveness of the organization.

5. **Increase in revenues:** As with the help of budgetary control system an organization is capable of controlling the cost of its goods and services and hence, by having competitive advantage over its competitors, the selling price is fixed at lower level which consequently helps in increasing the demand of the products by the customers. In this way by making more sales the organization increases its revenue.

6. **More profits:** By adopting the budgetary control technique an organization generates more surpluses by increasing its revenue and controlling its costs. In this way it earns more profits on its capital employed.

7. **Better financial position:** Better earning capacity attained by the organization through adoption of budgetary control system leads to a better financial position of the organization year over year in the form of increased reserves and surpluses and better asset base.

8. **Better control:** Under budgetary control system, the targets are assigned to the employees of the organization in the quantitative terms by preparing budgets. Hence, both the subordinates and superiors are well aware about their duties to be performed and controlled respectively. In this way, the system paves way for better control over various activities of the organization.

9. **Fulfilling Corporate Social Responsibility:** By having better performance in the form of increased rate of return on capital employed and sound financial position, the organization becomes capable of fulfilling its corporate social responsibility towards various stakeholders such as owners, management, creditors, suppliers, bankers, government, society, etc.

10. **Expansion and modernization:** The expansion and modernization of an organization is based on two things – capital and technology which are possible to be created with the help of adoption of budgetary control system by generating more and more profits year over year which leads to more capital formation and heavy assets base. Hence, with the enhanced financial power it is very much possible to expand more amounts on research and development activities and

purchase of latest technology for the growth and development of the organization. Maruti Udyog Limited is the best example to support the point of view.

11. **Employment generation:** The business organization adopting the budgetary control techniques is bound to grow fast and hence create more employment opportunities by expanding its areas of operations.
12. **Better standard of living:** Such types of organization having budgetary control provides better products and other amenities to their stakeholders which leads towards their better standard of living in the form of better food, shelter and clothing, etc.
13. **Economic growth:** If more and more business organizations adopt budgetary control system then there is a possibility of more growth and development in an economy with more profits and better financial positions of the organizations. It may help in abolishing the poverty from the economy by creating more job opportunities.

2.6 Pre-requisites of successful budgeting

The following are the essentials to successful budgetary control techniques:

1. An organization with well defined objectives, appropriate structure, proper classification of activities, clearly defined authority and responsibility etc.
2. A good accounting system having proper records of all the activities and capable of providing necessary information in time.
3. The superiors of the organization should support their subordinates from time to time whenever they are in need of.
4. A management system comprising of reward and punishment is also needed.
5. A better co-coordinating system among the employees and activities of the organization is also needed in the adoption of budgetary control system.

2.7 Limitations of Budgetary Control System

The following are main limitations of budgetary control system:

1. **Lack of co-ordination and co-operation:** If an organization is lacking in co-ordination and co-operation, the budgetary control system may not give desired results.
2. **Stress on the employees:** The system passes on targets to the employees whom they are supposed to attain in any case within a time framework causes stress in the minds of employees leading to ill health and other related issues.
3. **Proper support of top-level management:** For the success and implementation of budgetary control system a proper support from the top- level management is always required
4. **Improper accounting system:** If the accounting system of the organization is not properly maintained then the budgetary control system may not be successful.
5. **Improper control system:** If the control system of the organization is not appropriate and prompt then the chances of failure of budgetary control system increase substantially.

6. **Biased attitude of management:** The success of the budgetary control system depends on the fair and honest behavior of the management but if it is biased then the reverse may happen.

2.8 Types of budgets

Budgets may be classified on the basis of:

1. Time
2. Functions
3. Flexibility

Types of budgets on the basis of time:

a) **Short-term budgets:** These are the budgets which are prepared for a short period ranging from one year to five years.

b) **Current budgets:** These are very short term budgets such as weekly, fortnightly, monthly and quarterly etc. which are to be implemented in near future.

c) **Long term budgets:** The budgets which are prepared for a long period (more than five years) of time.

Types of budgets on the basis of functions/functional budgets:

These are the budgets based on the functions of the organisations:

a) Material Budget
b) Labour Budget
c) Production Budget
d) Overhead cost Budget
e) Sales budget
f) Personnel Budget
g) Plant utilization Budget
h) Cash Budget
i) Research and development Budget
j) Master Budget (it is the summary of all functional budgets), etc.

On the basis of flexibility:

a) **Fixed Budgets:** The budgets which are prepared with fixed standards or level of activities and there is no provision of making change in them.

b) **Flexible Budgets:** These are the budgets the estimates of which have tendency to be change as per the change circumstances.

c) **Semi-flexible Budgets:** These are the budgets denoting a part of them not to be changed but some of the estimates have provisions to have changes as per the changed circumstances.

SALES BUDGET

Example 2.1: Shiva Ltd. produces two kinds of products, P and Q and put them for sale in two districts i.e. Faridabad and Delhi markets. The information related to production and sale of products for the year ending 31st March, 2019 is as follow:

Market	Product	Budgeted Sale	Actual Sale
Faridabad	P	500 at ₹ 11 each	600 at ₹ 11 each
	Q	400 at ₹ 13 each	300 at ₹ 13 each
Delhi	P	600 at ₹ 11 each	800 at ₹ 11 each
	Q	500 at ₹ 13 each	400 at ₹ 13 each

It is observed that product P is overpriced while Product Q is underpriced and if price of product P is decreased by Rs. 1 and price of product Q is increased by Rs. 2, then it is estimated that the sale would be increased in following manner:

Product	Faridabad	Delhi
P	10%	10%
Q	20%	5%

Also, it is further estimated that the use of sales promotional scheme would also raise the sales of product as follow:

Product	Faridabad	Delhi
P	50 Units	40 Units
Q	20 Units	75 Units

Prepare a sales budget including the above estimates for the year ending 31st March, 2020

Solution:

Sales Budget for the year ending 31st March, 2020

Market	Product	Current Year Budget			Future Period Budget			Actual Sales		
		Units	Price ₹	Amount ₹	Units	Price ₹	Amount ₹	Units	Price ₹	Amount ₹
Faridabad	P	500	11	5,500	600	10	6,000	600	11	6,600
	Q	400	13	5,200	500	15	7,500	300	13	3,900
	Total	900		10,700	1,100		13,500	900		10,500
Delhi	P	600	11	6,600	700	10	7,000	800	11	8,800
	Q	500	13	6,500	600	15	9,000	400	13	5,200
	Total	1,100		13,100	1,300		16,000	1,200		14,000
Total	P	1,100	11	12,100	1,300	10	13,000	1,400	11	15,400
	Q	900	13	11,700	1,100	15	16,500	700	13	9,100
	Total	2,000		23,800	2,400		29,500	2,100		24,500

CASH BUDGET

Receipts and Payments Method

Example 2.2: You are required to prepare a cash budget for the month June, July and August for the year ending 31st March, 2020 on the basis of following information:

Month	Credit Sales ₹	Raw Material ₹	Labour Expenses ₹	Manufacturing Expenses ₹
April	2,40,000	1,68,000	20,000	14,000
May	2,60,000	2,00,000	24,000	16,000
June	1,60,000	2,08,000	16,000	12,000
July	2,32,000	2,12,000	20,000	24,000
August	1,76,000	1,60,000	16,000	12,000

Additional Information:

1. Balance of cash on 1st June, 2019 is ₹ 10,000.
2. Machinery purchased of Rs. 50,000 in August, out of which 10 per cent is to be paid in cash while rest is paid after one month.
3. Advance tax is to be paid in the month of June of Rs. 5,000.
4. Credit period allowed as follow: (a) for customers – 2 months, (b) for suppliers – 1 month, (c) for manufacturing expenses – half month.
5. Rent is to be received in the month of July of Rs. 10,000.

Solution:

Cash Budget for the Year ending 31st March, 2020

Particulars	June	July	August
Opening Balance	10,000	9,000	33,000
Budgeted cash receipts:			
Received from Debtors	2,40,000	2,60,000	1,60,000
Rent Received	-	10,000	-
Total Receipts 'A'	2,50,000	2,79,000	1,93,000
Budgeted cash payments:			
Creditors	2,00,000	2,08,000	2,12,000
Labour Expenses	16,000	20,000	16,000
Manufacturing Expenses	14,000	18,000	18,000
Tax paid in advance	5,000	-	-
Machinery Purchased	-	-	5,000
Total Payments 'B'	2,35,000	2,46,000	2,51,000
Closing Balance 'A - B'	9,000	33,000	(58,000)

Working notes:

1. The closing balance of every month is the opening balance of next month.
2. Labour charges are paid in the month in which it incurred.
3. Half of the manufacturing expenses of the month May and half of June will be paid in the month of June and so on: ½ (16000) + ½ (12000) = 14000, ½ (12000) + ½ (24000) = 18000 and so on.

FLEXIBLE BUDGET

Example2.3: A factory in Nelco Motor Co. currently produces 5,000 units while working at 50% capacity. At 80% capacity, cost of material will raise 2% and selling price will be go down by 2%. Also, at 100% capacity cost of materials move up by 5% and selling price will be move down by 5%.

The selling price of the product is ₹ 300 per unit at 50% capacity and cost per unit is as follow:

	₹
Materials	150
Labour	40
Work Expenses (60% variable)	20
Administration and office Expenses (50% variable)	40
	250

Help Nelco Motor Co. in estimating its profits when it works at 80% and 100% of its capacity

Solution:

FLEXIBLE BUDGET

	Existing		*Proposed*
Level of Activity	50%	80%	100%
No. of Units	5,000	8,000	10,000
Variable Costs:	₹	₹	₹
Material	7,50,000	12,24,000	15,75,000
Labour	2,00,000	3,20,000	4,00,000
Work Overhead	60,000	96,000	1,20,000
Administration and office overhead	1,00,000	1,60,000	2,00,000
Total Variable Costs….(i)	11,10,000	18,00,000	22,95,000
Fixed Costs:			
Work Overhead	40,000	40,000	40,000
Administration and office overhead	1,00,000	1,00,000	1,00,000
Total Fixed Costs……...(ii)	1,40,000	1,40,000	1,40,000
Total Costs (i)+(ii)	12,50,000	19,40,000	24,35,000
Sales Value	15,00,000	23,52,000	28,50,000
Profit	2,50,000	4,12,000	4,15,000

Adjusted Profit and Loss Method

Example 2.4: The Prepare a cash budget of ABC Ltd. using adjusted profit and loss method on the basis of following information:

BALANCE SHEET
as at 31st March, 2019

Liabilities	₹	*Assets*	₹
Equity Share Capital	2,00,000	Building	1,00,000
Reserve	40,000	Machinery	50,000
Accumulated Profit	20,000	Trade receivable	80,000
Trade payable	1,00,000	Inventory	40,000
Bills Payable	20,000	Bills Receivables	10,000
Outstanding interest	4,000	Prepaid rent	2,000
		Bank Balance	1,02,000
	3,84,000		3,84,000

PROJECTED TRADING AND PROFIT AND LOSS ACCOUNT
As on 31st March, 2020

		₹		₹
To Opening Stock		40,000	By Sales	4,00,000
To Net Purchases		3,00,000	By Closing Stock	30,000
To Carriage		4,000		
To Gross Profit c/d		86,000		
		4,30,000		4,30,000
To Interest		6,000	By Gross Profit b/d	86,000
To Salaries		12,000	By miscellaneous Receipts	10,000
To Depreciation (10% on building and Machinery)		15,000		
To Interest	12,000			
(Less) Outstanding Interest	(4,000)			
	8,000			
(Add) Outstanding interest	2,000	10,000		
To Rent	6,000			
(Add) Prepaid rent	2,000	8,000		
To carriage outwards		4,000		
To Advertisement		2,000		
To Net Profit carried down		39,000		
		96,000		96,000

	₹		₹
To Preference Dividends	16,000	By last year profit	20,000
To transfer to Reserve	8,000	By Net Profit for current year	39,000
To Balance transferred to balance sheet	35,000		
	59,000		59,000

Balances at the end are as follow:

Equity Share Capital ₹ 2,20,000, 7% Loan ₹ 50,000, Trade payable ₹ 80,000, Trade receivable ₹ 1,20,000, Bills Payable ₹ 22,000, Bills Receivables ₹ 4,000, Fixtures ₹ 25,000, Vehicles ₹ 40,000. Vehicles and fixtures are purchased at the closing of the year.

Solution:

Cash Budget as on 31st March, 2019

		₹
Opening Balance		1,02,000
	₹	
Add: Current year Net Profit	39,000	
Depreciation	15,000	
Decrease in Bills Receivables	6,000	
Increase in Bills Payable	2,000	
Issue of Equity Shares Capital	20,000	
Issue of Loan	50,000	
Decrease in Prepaid Rent	2,000	
Decrease in inventory	10,000	1,44,000
		2,66,000
Less: Purchase of Machinery	40,000	
Purchase of Fixtures	25,000	
Increase in Trade receivable	40,000	
Decrease in Trade payable	20,000	
Decrease in Outstanding interest	2,000	
Preference Dividends	16,000	1,63,000
Closing Balances as at 31st March, 2020		83,000

Balance Sheet Method

Example 2.5: According to the previous example, prepare the cash budget using balance sheet method.

Solution:

BUDGETED BALANCE SHEET
as at 31st March, 2020

Liabilities	₹	Assets		₹
Equity Share Capital	2,20,000	Premises	1,00,000	
7% Loan	50,000	*Less:* Depreciation	10,000	90,000

Reserve	48,000	Machinery	50,000	
Accumulated Profit	35,000	*Less:* Depreciation	5,000	45,000
Trade payable	80,000	Fixtures		25,000
Bills Payable	22,000	Trade receivable		1,00,000
Outstanding Interest	2,000	Bills Receivables		4,000
		Vehicles		40,000
		Inventory		30,000
		Bank (Balancing Figure)		1,23,000
	4,57,000			4,57,000

MASTER BUDGET

A specimen of master budget is as follows:

MASTER BUDGET

Period… Normal Capacity…… Budgeted Capacity…..

	Product X	Product Y	Product Z	Total
	₹	₹	₹	₹
Sales (A)	60,000	80,000	1,00,000	2,40,000
Cost of Sales (B):				
Raw Materials	10,000	12,000	14,000	36,000
Direct Wages	10,000	8,000	6,000	24,000
Manufacturing Expenses	8,000	6,000	8,000	22,000
Factory Expenses (Fixed)	10,000	10,000	12,000	32,000
	38,000	36,000	40,000	1,14,000
Add: Opening Stock of material	10,000	4,000	8,000	22,000
	48,000	40,000	48,000	1,36,000
Less: Closing Stock of material	8,000	8,000	4,000	20,000
	40,000	32,000	44,000	1,16,000
Gross Profit (C = A – B)	20,000	48,000	56,000	1,24,000
Less: Other Expenses (D)				
Office Expenses	10,000	10,000	10,000	30,000
Sales promotion expenses	6,000	10,000	10,000	26,000
	16,000	20,000	20,000	56,000
Net Profit (C – D)	4,000	28,000	36,000	68,000
Assets:				
Non Current	40,000	40,000	60,000	20,000
Current	30,000	36,000	24,000	10,000
Total capital employed	70,000	76,000	84,000	30,000

**You are required to fill up the columns given below.*

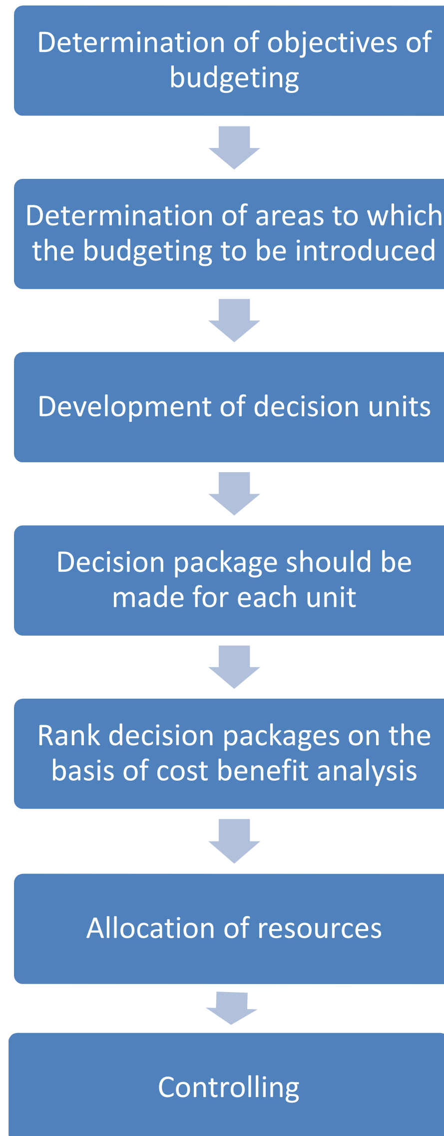
Ratios				
Net Profit/ Total Capital employed	……	……	……	……
Net Sales/ Total Capital employed	……	……	……	……
Net Profit/Sales	……	……	……	……
Current Ratio	……	……	……	……
Quick Ratio	……	……	……	……
Appropriation of profit				
Preference and Equity Dividends	……	……	……	……
Transfer to Reserves	……	……	……	……
Balance of profit of loss	……	……	……	……

2.9 Zero base budgeting

As the name suggests is beginning from zero base or 'De nova budgeting'. It is a process of preparing budgets from scratch or from the zero base. It is based on the underlying assumption that the previous year was zero. Here manager has to give justification of all expenses included in the budget. Process involves first step being recognizing department/segment/organisation activities as decision package then systematic analysis is conducted to evaluate the same and ranking them in order of significance.

Zero base budgeting is a shift from the traditional method of budgeting where former is based on programme oriented and decision oriented approach and latter on functionally oriented spending approach.

2.10 Procedure of setting up Zero base budgeting



2.11 Advantages

1. It ensures better utilization of organization resources as it works on the requirements and benefits.
2. It ensures that manager undertake programs that are indispensable for an enterprise and being performed in effective way.
3. It assists management in approving the budget on the ground of cost benefit analysis.
4. It helps managers in identifying uneconomical activities and proposes the alternative ways of performing activities.

5. It helps in increasing coordination and communication among the segment/department of the organization.
6. It is suitable in service department.

2.12 Disadvantages

It requires identification and development of decision packages which is time consuming process and involves a paperwork at large scale.

In case benefits cannot be determined of decision packages then their ranking is not possible which cause a problem in zero base budgeting process.

This approach of budgeting requires trained and skilled manpower causing it to be an expensive activity.

This approach of budgeting requires managers of decision units to be equipped with the idea behind the concept of zero base budgeting and training in the process of its introduction and effective implementation.

2.13 LEASE FINANCING

Meaning: The assets play a significant role in carrying out the business activities. Buying fixed assets particularly needs a lot of funds which are to be procured by the business organisation from the appropriate sources. Hence, it can be said that two functions of financial management mainly financing and investment are involved in purchase of fixed assets by a business organisation. Sometimes, buying an asset for cash may adversely affect the cash position of an organisation hence alternate method having assets are evolved. One of such method is lease financing where the asset is procured from its owner by the business under an agreement whereby generally the ownership remains with the owner but he permits to use his asset by other party in consideration of rent which is an income for landlord and expense for borrower. Under the agreement the owner of the asset such as land, building, plant and machinery, vehicle, etc. is known is lesser and the second party who takes the asset is known as lessee. Both the parties enter into a contract of lease having terms and conditions such as time period of lease, amount and time of instalments, maintenance of assets, risk, etc. According to Indian Accounting Standard 17 – "Lease finance can be said to be a contract between lesser and lessee whereby the former acquires the equipment goods plants as required and specified by the lessee and passes on the goods to the lessee for use for a specified place and in consideration, lessee promises to pay the lesser a specified sum in a specified mode at specified interval and at a specified place"

2.14 Features/characteristics of Lease:

1. It is a type of contract between owner of asset and the party using that asset.
2. Under the contract of lease, the owner of the asset is known as lesser and the second party as lessee.
3. The ownership of asset remains with the lesser.
4. The lessee makes payment of an agreed amount (lease rent) at regular intervals to the lesser which is expense for lessee and income for lesser.

2.15 Types of lease

1. Finance lease
2. Operating lease
3. Leveraged lease

Finance lease: It is a long term lease having a time period of three years or more. Generally, this type of contract is made for whole life of the asset and normally the asset is sold out to the lessee by the lesser on the expiry of the lease period. It is thought that the lesser recovers the total cost of asset and including the maintenance charges from the lessee during the period under contract though the lessee incurs all maintenance and expenses including insurance etc. on the asset. This type of lease is also known as capital lease and the asset is shown in the balance sheet of lessee.

Operating lease: Under this type of lease the asset is taken by lessee from lesser for a short period and the asset is returned back to lesser after the expiry of the lease period. Under this contract all maintenance charges including insurance are born by lesser and the asset is not shown in the balance sheet of the lessee.

Leveraged lease: Sometimes, a very big amount is needed to buy an asset. The lesser takes the partial (i.e. 30 to 40 per cent) help of banks or financial institutions to buy the asset and allows the lessee to use the asset and makes the alternate arrangement for the balance required funds. The interest on which is generally paid by lessee.

Sale and lease back: Under this lease, the owner of the asset sells the asset to someone to get the money and hires the same asset from the buyer on lease.

Domestic lease: Under this lease, both lesser and lessee belong to the same nation.

International lease: When the lesser and lessee belong to different country then it is called international lease.

Primary lease: When the rent of the asset is calculated in such a way that the cost of asset and reasonable rate of return on it is charged from the lessee by the lesser over the period of lease.

Secondary lease: Under this lease, the rent of the asset is settled at very low. This type of lease is also called Front and & Back Ended Lease.

2.16 Difference between finance and operating lease

Basis of difference	**Finance lease**	**Operating lease**
Time period	Long term- generally covering the life time of the asset.	Short term
Maintenance charges	Borne by lessee	Borne by lesser
Risk on asset	Borne by lessee	Born by lesser
Returns in the form of rent	Cost plus profit	May or may not be

Types of assets	Usually, high cost assets for example, land building, plant and machinery, etc.	Less costly assets
Sale of asset	Usually, done at the expiry of the contract period	Generally, the asset is not sold under this contract

2.17 LEASE FINANCING: Determination of Lease Rentals:

The lease rentals are calculated by taking following steps:

1. **Calculation of total cost of asset including installation and other charges**
2. **Calculation of cash flows to the lesser by taking into consideration tax advantage due to depreciation and investment allowance.**
3. **Calculation of present value of cash flows.**
4. **Calculation of net present value by comparing the present value of cash flows and total cost of asset.**
5. **Calculation of post and pre-tax rentals**

Determination of Lease Rentals

Harman Ltd. is suppose to lease out a machine costing ₹ 15,00,000 for 5 years (useful life of machine) whereas salvage of the same is ₹ 2,00,000. Harman Ltd. can claim a depreciation of 20% on W.D.V. of the machine but cannot claim investment allowance. The corporate tax applicable to firm is 50% and required rate of return (post-tax) is 12%. Calculate the lease rentals which should be charged by Harman Ltd.

Note:

1) PV Factor @ 12% is as follows:

Year	
1	0.893
2	0.797
3	0.712
4	0.636
5	0.567

2) Annuity value at 12% discount factor for 5 years is 3.605.

Solution:

(i) Cost of machine = ₹ 15,00,000

(ii) Calculation of cash flows to Harman Ltd.:

Year	*Amount of Depreciation (₹)*	*Tax Advantage on Depreciation (₹)*	*Tax Advantage on Investment Allowance (₹)*	*Salvage Value (₹)*	*Total Cash Flows (₹)*
1	3,00,000	1,50,000	Nil	-	1,50,000
2	2,40,000	1,20,000	-	-	1,20,000
3	1,92,000	96,000	-	-	96,000
4	1,53,000	76,800	-	-	76,800
5	1,22,800	61,440	-	2,00,000	2,61,440

(iii) Calculation of Present Value of Cash Flows:

Year	*Cash Flows (₹)*	*P.V. Factor at 12%*	*P.V. of Cash Flows (₹)*
1	1,50,000	0.893	1,33,950
2	1,20,000	0.797	95,640
3	96,000	0.712	68,352
4	76,800	0.636	48,844.80
5	61,440	0.567	1,48,236.48
		Total	4,95,023 (rounded off)

(iv) Minimum required net recovery through lease rentals:

MRLR = ₹ 15,00,000 - ₹ 4,95,023

= ₹ 10,04,977

(v) Post-tax Lease Rentals (PTLR) = $\frac{10,04,977}{3.605}$

= ₹ 2,78,773

(vi) Pre-tax Lease Rentals

= $2,78,773 \times \frac{100}{50}$

= ₹ 5,57,546

Lease Rentals in terms of lease financing

= $5,57,546 \times \frac{1000}{15,00,000} \times \frac{1}{12}$

= ₹ 30.97 per thousand per month.

Or,

₹ 371.64 per thousand per year.

2.18 Financial evaluation from lessor's point of view

The lease or buy decision by the lesser may be make either with the help of present value or internal rate of return method.

Present Value Method: Under this method, the cash outflows are calculated by taking into consideration the tax advantages and cash inflows after tax are also calculated with the help of discounting rate. After that, present values of cash inflows or outflows are compared and decisions are made.

Internal Rate of Return Method: Under this method, the rate of return on the lease asset is calculated and compared with market rate of return which helps in taking the appropriate decision.

By using the information given below, advice whether X Ltd. should lease out its machine or not?

Cost	₹ 5,00,000
Average cost of capital (lessor)	12%
Depreciation n Machine	20% on original cost
Useful Life of Machine	5 years
Scrap Value	-
Lease Rentals due at the end of each five years	₹ 2,00,000
Corporate Tax	35%
Present Value of an annuity of ₹ 1 for five years at 12% is ₹ 3.605	

Solution:

(i) Calculation of Cash Outflows:	**(₹)**
Cost of Equipment	5,00,000
Less: Tax Advantage	Nil
Cash Outflow	5,00,000

(ii) Calculation of After-Tax Cash Inflows:	**(₹)**
Lease Rentals	2,00,000
Less: Depreciation	1,00,000
Earning Before Tax (EBT)	1,00,000
less: Tax at 35%	35,000
Earning After Tax (EAT)	65,000
Add: Depreciation	1,00,000
Cash Inflows After-Tax (CFAT)	1,65,000

(iii) Computation of P.V. of Cash Outflows:

Year	*Cash Outflows (₹)*	*P.V. Discount Factor at 12%*	*P.V. of Cash Outflows (₹)*
0	5,00,000	1.00	5,00,000

(iv) Computation of P.V. of Cash Inflows:

Year	Cash flow After-Tax (CFAT) (₹)	*P.V. Annuity Discount Factor at 12%*	*P.V. of Cash Inflows (₹)*
1-5	1,65,000	3.605	5,94,825

(v) Calculation of Net Present Value:

P.V. of Cash Inflows	5,94,825
Less: P.V. of Cash Outflows	5,00,000
N.P.V. of Cash Flows	94,825

Since, the present value of Cash Inflows is greater than that of Cash Outflows, or, we can say that N.P.V. is positive, so it is advised that X Ltd. should lease out machine.

2.19 Financial evaluation from lessees' point of view

Infinity Ltd. is considering the option of acquiring the use of equipment costing ₹ 8,00,000.

There are two options:

i. To borrow ₹ 8,00,000 at 18% p.a. which is repayable in five equal installments; or
ii. To take equipment on lease for 5 years with lease rentals ₹ 1, 50,000.

Depreciation is allowed at 20% (straight line method) and tax rate is 50%. At the end of 5th year, the equipment will have a salvage value of ₹ 2, 00,000. What do you suggest to Infinity Ltd. about lease or buy decision.

Note:

1) PV Factor at 18% discount rate is as follows:

Year	
1	0.847
2	0.718
3	0.609
4	0.516
5	0.437

2) The P.V. of an annuity of ₹ 1 at 18% for 5 years is ₹ 3.127.

Solution:

(i) Calculation of Loan Installment:

$$\text{Loan Instalment} = \frac{\text{Amount of Loan}}{\text{P.V. Factor of Annuity}}$$

$$= \frac{8,00,000}{3.127}$$

= ₹ 2,55,836 approx.

(ii) Table Showing Loan Payment:

Year	*Loan Balance at begning of the year (₹)*	*Loan Instalment (₹)*	*Interest Payment on Outstanding Loan (₹)*	*Principal Payment*	*Loan Balance at end of the year (₹)*
1	8,00,000	2,55,836	1,44,000	1,11,836	6,88,164
2	6,88,164	2,55,836	1,23,870	1,31,966	5,56,198
3	5,56,198	2,55,836	1,00,116	1,55,720	4,00,478
4	4,00,478	2,55,836	72,086	1,83,750	2,16,728
5	2,16,728	2,55,739	39,011	2,16,728	Nil

- Amount of *Interest Payment on Outstanding Loan is rounded off.*
- *Amount of Loan Instalment in the 5th year is different because of compensation for rounding error.*

(iii) Calculation of P.V. of After-Tax Cash Outflows (Buying Option):

Year End	*Loan Instalment (₹) (1)*	*Tax Saving on*			*Net Cash Outflows (₹) (3 = 2 - 1)*	*P.V. Factor at 18% (4)*	*P.V. of Net Cash Outflows After Tax (₹) (5)*
		Interest (₹)	*Depreciation (After Tax) (₹)*	*Total (₹) (2)*			
1	2,55,836	72,000	80,000	1,52,000	1,03,836	0.847	87,949
2	2,55,836	61,935	80,000	1,41,935	1,13,901	0.718	81,781
3	2,55,836	50,058	80,000	1,30,058	1,25,778	0.609	76,599
4	2,55,836	36,043	80,000	1,16,043	1,39,793	0.516	72,133
5	2,55,739	19,505	80,000	1,53,234	1,56,234	0.437	68,274
						Total	3,86,736
less: P.V. of salvage value at the end of 5th year (2,00,000 × .437)							87,400
							2,99,336

(iv) Calculation of P.V. of After-Tax Cash Outflows (Lease Option):

Year End	*Lease Rental (₹)*	*Tax Savings on Lease Rent (₹)*	*After-Tax Cash Outflows (₹)*	*P.V. Factor at 18% (₹)*	*Total P.V. of Cash Outflows (₹)*
1 - 5	1,50,000	75,000	75,000	3.127	2,34,525

Since the P.V. of cash outflows (after tax) under lease option is less than P.V. of cash outflows (after tax) under buying option, Infinity Ltd. is suggested to take equipment on lease.

2.20 Benefits/advantages of Lease

1. **Low cost:** Since, the asset is not purchased at the time of contract and only lease rental is paid. Therefore, it saves the cost of assets from the view point of lessee.
2. **Saves time:** To have asset under lease generally takes less time in comparison to buying asset on loan basis.
3. **Reduces the risk of obsolescence:** Under the contract of lease if the asset becomes outdated due to change in technology, it can be easily be transfer back to lesser by the lessee to avert the risk.
4. **More profits:** A business organization not only makes the use of the asset by spending very low amount but also uses capital thus saved alternatively to enhance its profits.
5. **Tax saving:** Both the lesser and the lessee get the advantage of tax benefit under the contract.
6. **Better financial position:** With the help of the lease contract the borrowing capacity of the business remains unchanged. Hence, the possibility of further financial consolidation remains open.
7. **Saves from inflation:** The cash flows of the business are not affected by inflation due to fixed payment for the asset under lease.
8. **Helps in planning:** Planning regarding the cost of the asset can easily be made under the contract of lease.
9. **Better cash management:** The cash which is said to be the life blood of the business organization can be managed better under the lease.

2.21 Disadvantages

1. **More expensive:** As the lease rentals also include profit charged by lesser, therefore it is a costly affair for lessee to get the asset under lease.
2. **Risk of technological change:** Technology changes very fast and consequently the asset become out of fashion and are returned back to lesser by lessee causing heavy loss to the owner.
3. **No alteration in the asset:** Generally the lessee is not allowed to make changes in the asset and hence, he cannot use it in a way he wants.
4. **Loss due to inflation:** Sometimes, the lessee does not take the advantage of availability of asset at low prices in market and has the only option to get it on lease from lesser when its prices hiked in the market.

5. **Difficult terms and conditions:** Generally, the terms and conditions of the contract of lease are very complex to understand and implement.
6. **Termination complex:** The provisions of heavy penalty are made in the contract if it is terminated before time.
7. **Difficult to assess the lease rentals:** Personal biases from both the parties may affect the real calculations of lease rentals.
8. It is very difficult for the lesser to decide whether he should lease out the asset or not.
9. It is very difficult to take lease or buy decision by the lessee under complex business environment.

2.22 Questions for Practice

Short Answer Type Questions

1. Define budget.
2. Explain budget manual
3. What do you mean by budgetary control?
4. Differentiate between forecast and budget.
5. Elucidate zero base budgeting.
6. Explain flexible budget.
7. What is lease financing?
8. Write short notes on following:

a) Lease rental

b) Financial lease

c) Sales and lease back

d) Limitations of lease financing

Long Answer Types Questions

1. What do you understand by budgetary control? Explain its advantages and disadvantages.
2. What are the considerations which govern the installation of a budgetary control system? Examine.
3. What is master budget? Illustrate the preparation of master budget.
4. Differentiate between fixed and flexible budget.
5. Discuss the essentials of a good budgetary control system. Explain briefly the steps in setting up a budgetary control system so that its working efficiency is ensured.

6. "Why do responsible people in an organization agree to accept budgetary control in theory but resist in practice?"
7. What is lease financing? How it is determined?

Suggested Readings:-

1. J.K. Aggarwal, R.K. Aggarwal, M.L. Sharma – Accounting for Managerial Decisions– Ramesh Book Depot, Jaipur.
2. R. Kishore–Advance Management Accounting–Taxman allied Services Pvt. Ltd.
3. M.Y. Khan, P.K. Jain–Management Accounting–Tata McGraw Hill
4. Horngren, Sundem, Stratton–Introduction to Management Accounting-Pearson Education
5. S.N. Mittal–Accounting & Financial Management – Shree Mahavir Book Depot, Nai Sarak, New Delhi.
6. Anthony, Robat N., Hawkins and Merchant Management Ac

UNIT-3

Contemporary issues in Management Accounting

Objective of the Unit

- To make the learner aware about Value Chain Analysis, its objectives, types, process, etc.
- To endow knowledge about Activity Based Costing, its need, process, comparison between Activity-Based Costing and traditional costing.
- To have knowledge about Quality Costing, Total Quality Management and Quality Circle.
- To understand the Target Costing, its need, process, comparison between Target Costing and Traditional Costing
- To know the meaning of Life Cycle Costing, its need, process and methodology etc.

Structure

3.1 Value Chain Analysis
3.2 Objectives of Value Chain Activities
3.3 Types of Value Chain Activities
3.4 Process of Value Chain Analysis
3.5 Advantages of Value Chain Analysis
3.6 Limitations of Value Chain Analysis
3.7 Meaning of Activity-based costing.
3.8 Characteristics of Activity-based costing.
3.9 Need of Activity-based costing.
3.1 Benefits of Activity-based costing.
3.11 Steps involved in Activity-based costing.
3.12 Limitation of Activity-based costing.
3.13 Comparison of ABC and Traditional Costing.
3.14 Introduction of Quality Costing
3.15 Taxonomy of costs of Quality
3.16 Analysis of Quality Costs
3.17 Total Quality management
3.18 Features or characteristics of Total Quality Management
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Introduction

With the passage of time the business environment and its elements go on changing due to various external and internal factors which give birth to the contemporary issues such as Value Chain Analysis, Activity-based Costing, Quality Costing, Total Quality Management, Target Costing, Life Cycle Costing, etc. which need to be studied seriously and systematically so as to find out the strong and weak points of business organizations; further by controlling the weak points and consolidating the strong points, the efficiency and the effectiveness of the business organizations can be increased susbstantly which leads toward the attainment of their predetermined objectives.

3.1 Value Chain Analysis

Value chain refers to the group of activities through which a product passes during its life cycle. All these activities add some value to the product and at the end, the value of final product becomes much more than that of raw product. For example, a rough diamond passes through various activities such as

cleaving, bruiting, polishing, inspecting, etc. where each activity adds some value to it. At the end, it is evident that the value of rough diamond is much less than that of polished diamond.

The concept of value chain analysis was originated in 1985 by Michael porter. Value Chain Analysis means in depth study of all the activities from procurement of raw material to the disposal of product so that value added by each activity can be assessed and non-value activities would be eliminated resulting in to the cost control and cost reduction.

This technique has been adopted by various companies such as Pizza Hut, Apple, IBM, etc.

Definitions of Value Chain analysis are as follows:

According to ***Investopedia*** (a dictionary), "Value chain analysis looks at every step a business goes through, from raw materials to the eventual end-user. The goal is to deliver maximum value for the least possible total cost."

Porter refers to Value chain analysis as "the internal processes or activities a company performs to design, produce, and market, deliver and support its product… A firm's value chain and the way it performs individual activities are a reflection of its history, its strategy, its approach of implementing its strategy, and the underlying economies of the activities themselves."

3.2 Objectives of Value Chain Activities

I. **To build competitive advantage.** In today's era, it becomes crucial to be distinguished from the competitors, value chain analysis helps a firm to have some advantages over competitors which leads to higher prices, more customers and brand loyalty. It is essential for a business to be successful.

II. **To increase customer satisfaction.** A firm's efforts are directed towards the need satisfaction of present and potential customers which can be done by increasing value and reducing cost.

III. **To maximize profits.** The focus is on elimination of non-value added activities, reducing costs and increasing value which stimulates customers to pay more for the offered value of products leads to the higher margin as well as increase the overall profitability of the firm.

3.3 Types of Value Chain Activities

Various activities through which a product passes can be categorized into two types:

1) **Primary Activities.** The activities which are directly concerned with the production, sales, delivery as well as after sales services of the product are known as primary activities.

2) **Support Activities.** The activities which support primary activities are termed as support activities.

Primary Value Chain Activities are as follows:

1) **Inbound Logistics:** Refers the activities related to purchasing of inputs and storing them. For example: Warehousing, Inventory control, Material handling, etc.

2) **Operations:** Refers to the activities related to the conversion of raw material into finished product. For Example: Assembling, Packaging, Testing, etc.

3) **Outbound Logistics.** Refers to activities related to the delivery process of finished goods. Activities included in outbound logistics are warehousing of finished goods, Transportation, Order processing, etc.

4) **Marketing and Sales.** Refers to the activities which help in stimulating the public to purchase the products. For example: Advertising, Sales promotion, Distribution channel, etc.

5) **Service.** Refers to the activities which help in providing services to the customers after sales for the enhancement and maintenance of the value of the product. For example: Installation, Training, Repair, Spare parts, etc.

Support Value Chain Activities are as follows:

1) **Infrastructure.** An efficient infrastructure helps a firm in proper utilization of its resources as well as in enhancing the goodwill of the firm. It assists overall activities of the firm instead of individual activities. For example: Organisation structure, Legal structure, Financial system, etc.

2) **Human Resource Management.** It deals with the issues related to human factor in the firm starts from recruitment of employees and never ends. It includes Recruitment, Selection, Training, Motivation, etc.

3) **Technology Development.** It plays a crucial role for the value added activities to gain competitive advantage through cost control, cost reduction, etc. For example: Telecommunication technology, Accounting automation software, Product design research, etc.

4) **Procurement.** It refers to the purchase of inputs, machinery, equipments related to office, laboratory, etc. so as to assists various value added activities.

3.4 Process of Value Chain Analysis

To analyze the firms cost advantage, the following steps are followed:

(A) Internal Cost Analysis.

At this step, value generating activities and costs associated with them are analyzed. The following steps are necessary for this analysis:

(a) Identification of firm's primary and support activities.

All the activities which are involved from the production of product to the after sale services are identified and segregated into the primary and secondary activities which requires an appropriate knowledge of firm's operations. Also, at this stage by identifying these activities work is to be done to deliver maximum possible customer value.

(b) Determination of proportion of each activity in the total cost.

The total cost of product or service will be determined and assigned to all activities. For this, one can use any method of cost allocation but activity based costing may be the appropriate one as it helps in the proper allocation of overhead costs. Through this, a firm can determine the activities from where most of the costs incurred.

(c) Identification of various cost drivers related to each activity.

Cost drivers are the factors which determine costs for each activity. Only after identifying them, a manager can make efforts to improve them. Depending upon the nature of activities, different activities have different cost drivers. For example, activities related to labour, may have cost drivers such as work speed, wage rate, working hours, etc.

(d) Identification of linkages between various activities.

Activities in the firm seem to be separate but still there may be some inter-relationship among them. It is needed to identify those inter-relationship and degree of linkages as it helps in determining how cost and value of one activity affects other as well as the whole value chain. For example, costs reduction in one activity may lead to costs reduction in other activities or vice-versa. Study of linkages is as important as the study activities.

(e) Assessment of opportunities for cost advantage.

It is the stage where a firm comes to know about the effective and ineffective activities and various costs drivers related to them. An effort should be made to improve the efficiency of each activity by reducing the costs related to each activity as well as elimination of non-value added activities. For this, a firm can also evaluate various alternatives such as make or buy, retain or replace, selling or further processing, etc. for example, increasing production can neutralize the effect of high wage rates.

(B) Differentiation Advantage Analysis

Various sources of differentiation are found out so as to create superior products with more features and quality satisfying customer needs with minimal cost.

(a) Identification of customers' value-creating activities.

To determine the best differentiation strategy customers' value generating activities are identified and studied as the main aim of differentiation is to increase the customers' satisfaction. For example, the success of Apple lies in its marketing activities instead of features they offer.

(b) Evaluation of differentiation strategies for improving customer value.

At this step, various strategies are assessed for differentiation and evaluated by the managers. They may be related to adding more features to the product, customization, offering complementary products, etc.

(c) Identification of best differentiation strategy.

The best strategy is one which incorporates the activities delivering high customer value with superior differentiation. The strategy with this combination is selected amongst all alternatives.

(C) Vertical linkage Analysis.

A firm's value chain starts from suppliers and ends at customers. The value chain of all the parties should be analyzed so that by establishing various linkages customers' value can be increased at reduced costs. It involves the following steps:

(a) Identification of industry's value chain.

At this step, an effort should be to analyze the value chain of industry to assess its costs, revenues and assets but the unavailability of data hinders this process. Firm have to rely upon published data which has its own limitations.

(b) Identification of cost drivers.

For vertical linkages, it is necessary to identify the appropriate cost drivers for each value-generating activity which helps in determining its suitability.

(c) Assessment of opportunities for competitive advantage.

In order to assess various opportunities for competitive advantage, competitors' value chain would be identified and evaluated. It's difficult to identify competitors' value chain and hence

becomes a hurdle in this process. In today competitive era, every firm should make efforts to determine various opportunities such as study of various factors internal as well as external.

3.5 Advantages of Value Chain Analysis

1) **Reduced cost advantage.** By adopting VCA, cost can be reduced to a maximum possible extent by analyzing the value generated by the activities and correspondence costs incurred by the same.
2) **Identification of core competencies.** By analyzing the activities, a firm will be able to distinguish between the value added and non-value added activities and also related cost drivers which help in determination of core competencies and converting them into competitive advantage.
3) **Differentiation.** A firm can compare its competitive advantages with that of competitors which will help it in building various differentiation strategies such as reconfiguration of value chain, etc.

3.6 Limitations of Value Chain Analysis

The following are the limitations of value chin analysis:

1) Due to the breaking of operations into various segments, there is a chance of losing firm's overall vision and strategy.
2) Its application is limited to the manufacturing industries only as service industries found it difficult to implement this technique.
3) It is a complex technique requires hiring of experts.
4) The concept of value is theoretical as well as vague.

ACLTIVITY BASED COSTING

3.7 Meaning of Activity-based Costing

Activity-based costing is a costing technique which helps in better allocation of indirect and overheads costs related to various products or services by establishing relationship between products, activities performed and relevant overhead costs, whereas, some overhead costs are still difficult to assign such as managers salary. This technique is more useful in manufacturing industry instead of service industry as identifying of activities and traceability of their costs is easy in former case. Various areas where ABC is used are product costing and pricing, target costing, determination of profitable and non-profitable product, etc.

The Chartered Institute of Management Accountants (CIMA), London, defines it as "A technique of cost attribution to cost units on the basis of benefits received from indirect activities, e.g., ordering, setting up, assuring quality."

According to Horngren, "ABC is a system that focuses on activities as fundamental cost objects and utilizes cost of these activities as building blocks or compiling the costs of other cost objects."

3.8 Characteristics of Activity Based Costing

1. **Activity based.** This system is based on activities i.e. various tasks involved in the production of products.
2. **Cost pool.** It refers to that part to which overhead costs are assigned.
3. **Cost drivers.** Various cost drivers are used under ABC method which determines the cost of particular activity.
4. **Allocation of overheads.** Overhead costs are allocated on the basis of activities performed during production of specific product.
5. **Traceability.** Using ABC, tracing of overheads become easy which provides accurate and reliable data.

3.9 Need of ABC

1. When total costs constitute a significant portion of overhead costs.
2. When a company deals in varied product lines requiring different support activities.
3. When product lines are different from each other and manufacturing process is complex.
4. When the factors of production used in manufacturing process/products changes. For example, from labour-intensive to capital-intensive process.
5. When management is not satisfied with the existing costing system.

3.10 Benefits

1. **Profitable and non-profitable products.** By determining the cost of products accurately, profitable products can be segregated from the non-profitable products.

2. **Realistic cost.** Determines the realistic cost of manufacturing for relevant products.
3. **Better allocation of overheads.** Through ABC, it becomes possible to allocate overheads properly on the basis of number of activities performed for a specific product.
4. **Decision making.** It helps management in making right decision at right time by providing relevant, accurate and reliable costs information timely.
5. **Unnecessary costs.** Identifies inefficient processes which have wasted and unnecessary costs and aimed to improve them.

3.11 Steps involved in *ABC*

The following steps are followed to determine the cost of product through ABC method:

I. **Examination of costing system prevailing in the organisation.** First of all, existing costing system should be evaluated, whether it is capable of adopting ABC technique or not? If yes, then proceed to the next step.

II. **Determining activities.** All those activities which are involved in the production are identified and analyzed. For example: activities related to machines, labour, material, packaging, dispatching, etc.

Cooper and Kalpan categorized activities on the basis of levels.

i. **Unit-level activities / Primary activities.** Activities which are directly related to the volume of production fall into this category.

For example: Inspection, Material, etc.

ii. **Batch-level activities / Support activities.** These are activities which support primary activities and their costs are determined by number of batches of final products.

For example: Machine set ups, order of materials, etc.

iii. **Product-level activities.** These activities are related to product and their costs are determined by addition of new product lines and their maintenance.

For example: Designing of products, advertisement of particular product, etc.

iv. **Facility-level activities.** These activities are related to various facilities such as maintenance of land and building instead of specific products.

For example: Security of factory, salary of manager, etc.

III. **Determining of cost basis.** Average cost or past cost can be used as cost basis.

IV. **Determining of cost pools and assigning cost.** For each activity, cost pools/centres are to be determined at this step and cost of resources consumed by each activity during production will be allocated to these cost pools.

For example: Total costs of material handling might include one cost pool for all material handling related costs.

V. **Determining total output.** At this step, total output is determined for proper allocation of cost.

VI. **Selecting suitable cost drivers.** Cost drivers refer to the factors which determine the cost of a particular activity. They can be determined with the help of past data as well as by seeking help from the experts. Various cost drivers are as follows:

i. No. of set-ups.

ii. No. of machine hours.

iii. No. of labour hours.

iv. No. of orders.

VII. **Calculating cost driver rates.** At this stage, cost driver rates are determined by dividing the total cost of activity by number of events/transactions.

VIII. **Computing the cost of product.** The total cost of product can be calculated by multiplying no. of transactions of each activity with their respective cost driver rates and adding them thereon.

IX. **Review.** The accuracy of product cost as well as cost of activities is evaluated to determine the reliability of ABC method.

Example 3.1 Signature Ltd. manufactures two products X and Y. Product X is a low-volume item and its sales are 10,000 units per annum, whereas Product Y is a high-volume item and sales are 25,000 units per annum. Both products require three direct labour-hours for completion. The company works 95,000 direct labour-hours each year as given below:

		Hours
Product X:	10,000 × 3 hours	30,000
Product Y:	25000 × 3 hours	75,000
		95,000

Details of costs for material and labour for each product (per unit) are given under:

	Product X	Y
Direct Material (₹)	20	10
Direct Labour (at ₹ 10 per hour)	15	15

Total Manufacturing overheads = ₹ 7,35,500 per annum.
The company's' cost drivers in the incurrence of overhead costs are as follows:

Activity	*Traceable Costs (₹)*	*Number of events*		
		Total	*Product X*	*Product Y*
Machine setups	2,50,000	3,000	2,000	1,000
Production orders	60,000	300	100	200
Material Receipts	45,500	400	100	300
Quality inspections	80,000	4,000	2,500	1,500
Machine-hours worked	3,00,000	20,000	6,000	14,000
Total	7,35,500			

Compute per unit cost for each product using:

i. Direct Labour Hour Rate Method for absorption of overhead costs.
ii. ABC technique absorption of overhead costs.

Solution:

(i) Computation of per unit cost using Direct Labour Hour Rate Method:

$$\text{Overhead Rate} = \frac{\text{Manufacturing Overhead Costs}}{\text{Direct Labour Hours}}$$

$$= \frac{₹\ 7,35,500}{95,000} = ₹\ 7.74 \text{ per hour}$$

Using companys' overhead rate i.e. ₹ 7.74 per hour, per unit cost of each product is as follows:

	Product	
	X *(₹)*	*Y* *(₹)*
Direct Material	20	10
Direct Labour	15	15
Manufacturing Overhead (3 hours × 7.74)	23.22	23.22
Total cost per unit	58.22	48.22

(ii) Computation of per unit cost using ABC technique:

(a) OVERHEADS RATE BY ACTIVITY

Activity	*Traceable Costs (₹) (i)*	*Total Events (ii)*	*Rate per event (₹) (i)/(ii)*
Machine setups	2,50,000	3,000	83.33 per setup
Production orders	60,000	300	200 per order
Material Receipts	45,500	400	113.75 per receipt
Quality inspections	80,000	4,000	20 per inspection
Machine-hours worked	3,00,000	20,000	15 per hour

(b) OVERHEADS COST PER UNIT

Particulars	*Product X*		*Product Y*	
	Events	*Amount (₹)*	*Events*	*Amount (₹)*
Machine setups	2,000	1,66,660	1,000	83,330
Production orders	100	20,000	200	40,000
Material Receipts	100	11,375	300	34,125
Quality inspections	2,500	50,000	1,500	30,000
Machine-hours worked	6,000	90,000	14,000	2,10,000
Total Overhead Cost assigned		3,38,035		3,97,455
Total no. of units		10,000		25,000
Overhead Cost per unit		33.80		15.90

(c) COMPUTATION OF TOTAL COSTS OF PRODUCT

Particulars	*Activity Base*		*Direct Labour Base*	
	Product X	*Product Y*	*Product X*	*Product Y*
Direct Material	20.00	10.00	20.00	10.00
Direct Labour	15.00	15.00	15.00	15.00
Manufacturing Overheads	33.80	15.90	23.22	23.22
Total cost (₹)	68.80	40.90	58.22	48.22

Under Direct Labour Hour Rate Method, overhead cost rate is same for both the products, whereas, the rate is different under ABC technique which clearly shows that overhead costs are allocated more accurately under ABC technique.

3.12 Limitations

1. **Costly**. It is a costly method, suitable for large businesses as small business can't afford it.
2. **Complex.** ABC seems to be a complex technique which requires sufficient time, money and expert knowledge.
3. **Difficulty in overhead allocation.** Some overhead costs are difficult to allocate to products, e.g., salary of CEO of the company.
4. **Untraceable costs.** Also, some untraceable costs are allocated to products on pro-rata basis which is unjustified.

3.13 Comparison of ABC and Traditional Costing

Points of Difference	**Traditional Costing**	**Activity Based Analysis**
Focus	Focus is on managing costs of departments.	Focus is on managing processes and activities.
Purpose effectiveness	Purposes such as product costing and pricing are not effectively served.	Purposes such as product costing and pricing are effectively served.
Cost assignment	Overhead costs are first allocated to departments and then to products.	Overhead costs are first allocated to processes/activities and then to products.
Cost pools	Limited.	Many.
Rates used	Volume based rate is used.	Activity based rate is used.
Benefits	Simple and economical.	Elimination of non-value added activities, accurate product costing.
Suited For	Labour-intensive companies.	Capital-intensive companies.

Quality Costing

3.14 Introduction

Quality Concept: Quality can be defined as all the features of a product or service which satisfy the needs of consumer and producer.

According to Harvard Business School, "Quality is more than making a good product. So, quality must be defined by customer needs in product design (what are the products and services they want?), as well as by how well the product satisfies those needs."

Quality Costing: It is a management tool and technique for maintaining quality production and focus on expenses which are non value added. Quality costing technique is related to prevent, detect and improve the issues as well as upgrade the perceived value of the product or service. It is method which focus on the expectation of consumers to avail them good quality product and services with the use of quality processes and system.

According to Philip Crosby, "It is a powerful tool to raise awareness of the importance of quality. It referred to the measure as the "price of non conformance" and the organizations choose to pay for poor quality."

According to Armand Feigenbaum, "Quality costing is defined as an effective system for integrating the product and service development, quality maintenance and quality improvement efforts of the various groups in an organization so as to deliver products and services at the most economical levels, which allow full customer satisfaction."

3.15 Taxonomy of costs of Quality

Costs of quality have two constituents which are as follow:

1. **Costs of Conformance**

   (a) Prevention Costs: Prevention costs relate to the expenses of an activity taken to avoid or diminish the shortcoming and failures. For example, cost incur on customer surveys, training to employees, product designing and improvement, and preparation of quality reports etc.

   (b) Appraisal Costs: The expenses incur to inspect, test and establish the conformance to determine the product quality is known as appraisal costs. For example, costs involve in auditing and monitoring of product quality and equipment testing and supervision etc.

2. **Costs of Non conformance**

   (a) Costs of Internal failure: Cost arises due to poor quality of the product or services before handover them to consumers are known as the costs of internal failure such as cost of modification of the product or service, idle time cost and cost of discarding the defective products etc.

   (b) Costs of External failure: Cost arises due to poor quality of the product or services after handover them to consumers are known as the costs of external failure such as costs of

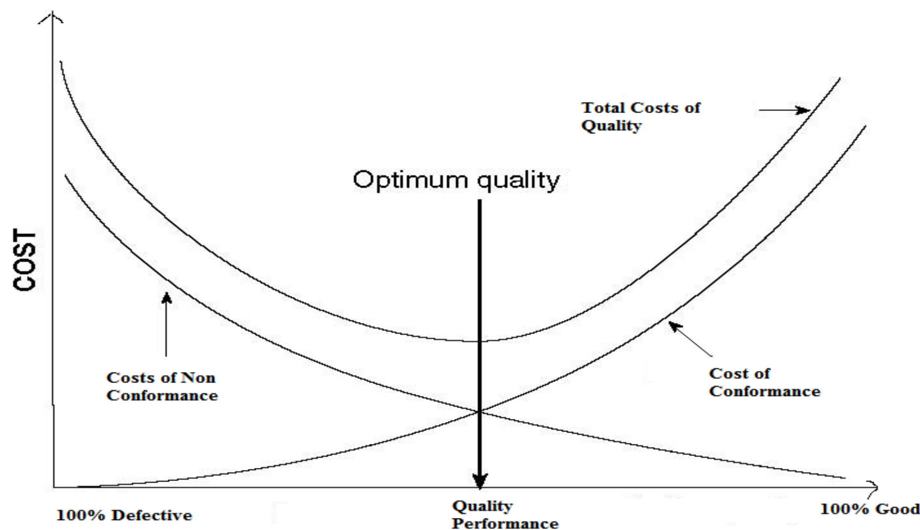
decreasing sales, claims by the customer for warranty, complains of customers and their investigations etc.

3. **Costs of Lost Opportunities:** The costs generate due to lost the present and potential consumers as the companies are not providing them good quality products and services. As a result, the goodwill of the companies decrease and growth of the firms may slow down.

3.16 Analysis of Quality Costs

The quality cost analysis can be done by following methods:

Graphic method: The optimum quality can be determined at the intersection of conformance and non-conformance costs. This is presented by the following graph:



Ratio Analysis: The good quality can be determined by using the ratio analysis and the calculated ratios can be compared with the pre determined standards. The following ratios may be used:

Effectiveness of Quality = Total Costs of Quality / Net Sales

Effectiveness of Quality = Costs of Internal Failure / Direct wages

Effectiveness of Quality = Costs of Internal and External failure / Manufacturing Expenses

3.17 Total Quality Management

Total Quality Management is a consumer focused and continuous improvement process of an organization. It is a management philosophy which is centred on overall quality improvements in an organization. It entails that all activities are directed towards attaining same objectives as well as continual advancement of a product, service or production process. TQM focuses on ensuring hundred per cent quality rather than defects. It is modern approach of quality costing which ensures prevention instead of detection. It also eliminates or reduces the failure costs. Primarily, TQM concept started in manufacturing sector, but, later is applicable to all areas of business. It is developed by W. Edwards Deming, Armand V. Feigenbaum and Joseph M. Juran and all of these are known as TQM Gurus.

According to Dr. Armand V. Feigenbaum, "Total Quality is an effective system for integrating the quality development, quality maintenance, and quality improvement efforts of the various groups' in an organization so as to enable production and service at the most economic levels which allow customer satisfaction"

3.18 Features or characteristics of Total Quality Management

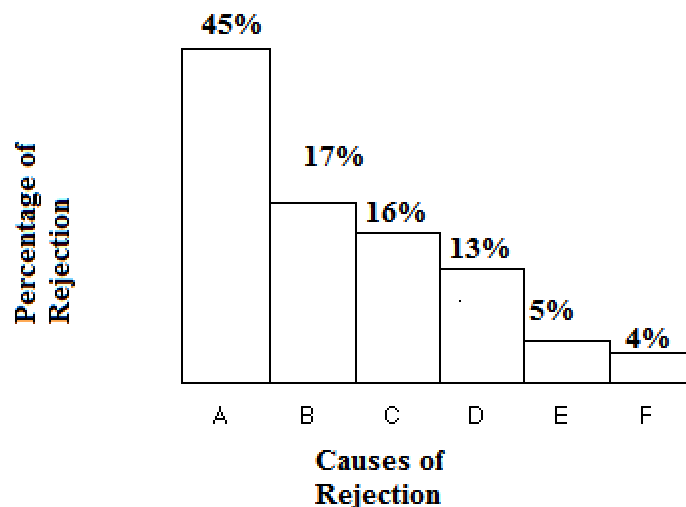
The key features of TQM are as under:

- It is customer oriented approach and also focuses on workers involvement.
- It continuously focuses on improvement of process, product or services.
- It is based on zero defects concept.
- It is a decision making concept based on facts.
- It is oriented towards organization's mission and goals.
- It is systematic and strategic concept based on quality management.

3.19 Tools and Techniques of Total Quality Management

The prime methods of TQM are as follow:

Pareto Principle: Pareto principle focuses on the area which requires maximum attention. For example mostly issues related to raw material or machine etc. therefore attention should be given to those problematic areas which has least share but create maximum problems. It can be explained by the chart given below:

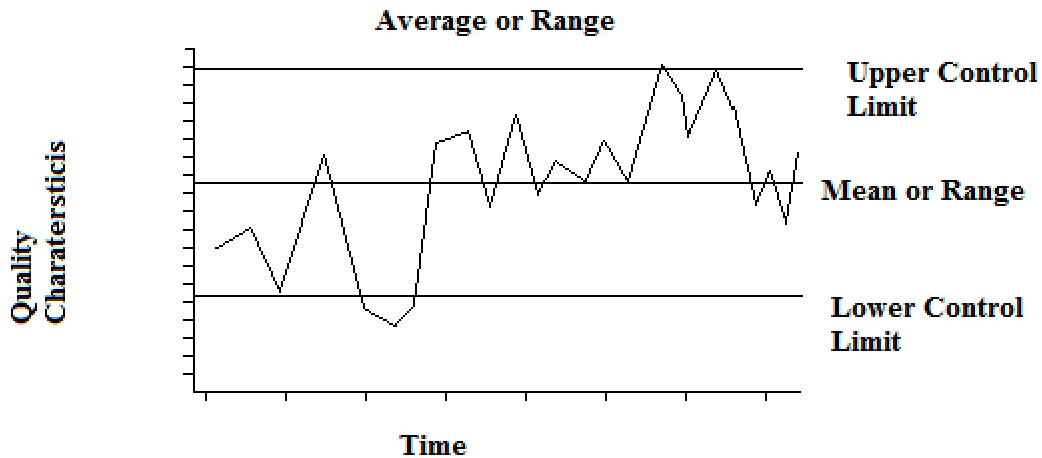


Check Sheets: It is format in which all type of data are recorded for the interpretation of results. It is acceptable in case of collection of different type data and simple to use.

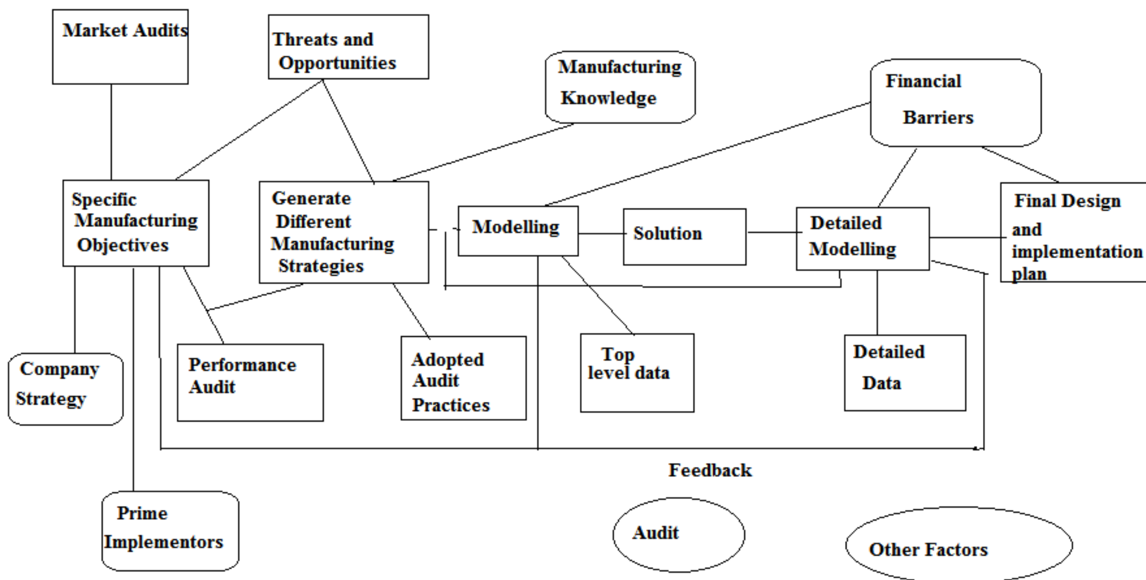
Check List: It relates to a particular problem or situation and defines the steps to be taken in various situations. It is useful in decision making.

Cause and Effect, Fishbone and Ishikawa Diagram: It is method of analyze the process dispersal. It relates to cause and effects and use three methods of analysis such as Dispersion, Process categorization and cause enumeration method.

Control Charts: These charts are the statistical methods to control the deviation of a distribution. Here, one has to make decision between upper and lower control limits.

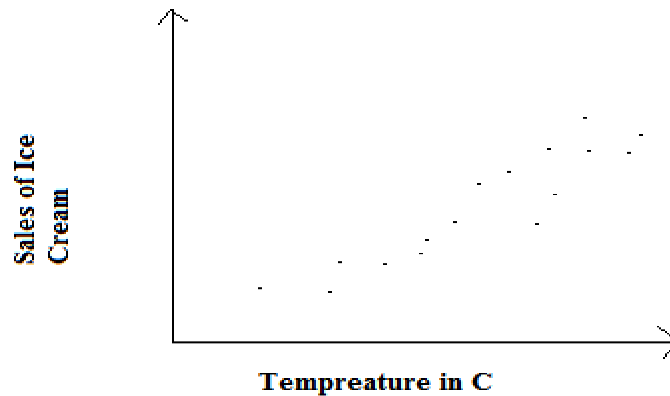


Flow Chart: It defines the direction of processes, opportunities, issues etc. It can be prepared using symbols, pictures, text, lines and flow chart can be depicts as under:



Histogram or Bar Diagram: It is graph which expresses the pattern and variation in data and makes useful conclusions.

Scatter Plots: It defines the correlation between two variables which are plotted along x and y axis having no line.



3.20 Advantages of Total Quality Management

Following are the benefits of TQM:

- It helps in reducing the cost and increase in productivity.
- It produces the concept of zero defects.
- It provides maximum satisfaction to consumers and increase market share.
- It also helps in increasing the morale of the employees.
- It improves the processes and innovative ideas.

3.21 Drawbacks of Total Quality Management

Along with the benefits TQM suffers from the following limitations:

- It provides benefits in long periods only.
- TQM concept cannot be adopted unless the change in organizational structure.
- Delegation of task in case of TQM proves dangerous.
- Due to shortcomings in planning, the target of TQM is not fulfilled.

3.22 Quality Circles

It is a small group of employees which helps in solving the job related problems of the workers in an organization. The group of six to ten members formed to solve the issues and meet as regular interval and headed by a senior staff member. It helps in building the cooperation between the employees and identifying the reasons of emerging the problems.

3.23 Features of Quality circles

The following are the characteristics of quality circles:

- Participation in quality circles is voluntary.
- It is used to solve the problems of employees.
- Training is given to the member of quality circle.
- Quality circle is supported by senior staff.

3.24 Objectives of Quality Circles

The quality circles are created to accomplish objectives given below:

- To develop the organization
- To make a cooperative and healthy environment
- To solve the problems of each level of organization
- To enhance the quality of the products, services and organization as a whole

3.25 TARGET COSTING

Target costing is a technique which focuses upon the management of cost. Under this technique, target selling price is determined for the product manufactured by the organisation through market analysis which includes competition level, customers taste and preferences, their value chain system, etc. and after that a target margin is deducted from target selling price to reach the target cost which the organisation will try to achieve. To attain the target cost an organisation can use various tools and techniques such as value analysis, total quality management, JIT, ABC, etc. which we will discuss later in this chapter. An organisation can make best use of this technique if it properly understands the value system of customer i.e. to which features and qualities of product they give importance and ready to pay some extra amount for them. Target costing is different from traditional costing as under the later, first of all, cost of production is calculated and then margin is added to it to determine the selling price of the product whereas the former one is almost opposite because in it selling price is determined first and then margin and the amount left will be the target cost that should be achieved by the organisation in order to survive in this competitive world. There are various industries such as construction, FMCG, health sector, etc. where the producer cannot control the price of the product as demand and supply plays a major role, so for these industries use of traditional costing technique proved worthless and it becomes necessity for them to implement target costing so as to achieve the objectives such as cost control cost reduction, etc.

Target cost = Target Selling Price – Target Margin

DO IT YOURSELF

Infinity Ltd. analyzed the market conditions and found out that it can charge ₹250 per unit for a toy. Its desired profit margin is 20% of selling price. You are required to determine the target cost of a toy.

(Ans. ₹200)

3.26 Definitions

According to CIMA, target cost is “A product cost estimate derived from a competitive price”

Cooper refers to target costing as “A disciplined process for determining and realizing a total cost at which a proposed product with specified functionality must be produced to generate the desired profitability at its anticipated selling price in the future.”

3.27 Features of Target Costing

- **i.** Market conditions play a major role in determining the selling price of the product.
- **ii.** Producer is a price taker instead of price maker.
- **iii.** Target selling price includes desired profit margin.
- **iv.** Focuses on Cost reduction, cost control, cost management, etc.
- **v.** The scope of cost reduction rests with the difference between target cost and the current cost of production.

3.28 Objectives of Target Costing

There are mainly three objectives of target costing:

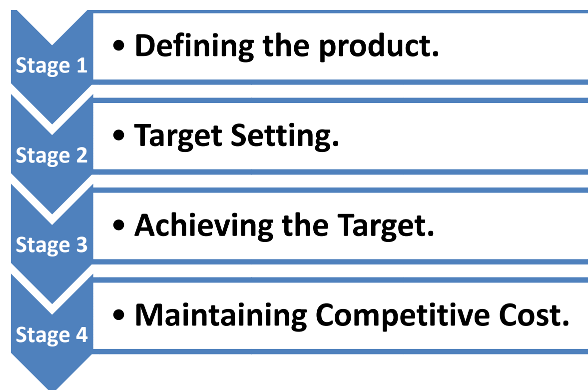
I. To reduce the cost of existing as well as new products to achieve the target cost.

II. To match the products with the needs of the customers.

III. To motivate the employees to work toward achieving the target cost leads to increased profitability.

3.29 Process of Target Costing

The below is the market-driven process of target costing which involves the following stages:



Stage 1: Defining the product. It refers to define the product of the company as "what is it selling? To Whom? and What is it supposed to do?"

Stage 2: Target Setting. It refers to balance "What customers are willing to pay for the product" and "what it costs to the firm?"

Stage 3: Achieving the Target. It refers to determining "How to achieve the target" and ensuring "Is the firm getting there?"

Stage 4: Maintaining Competitive Cost. It refers to maintaining the target cost achieved by the firm and focuses on "How the firm can stay ahead?"

3.30 Advantages of Target Costing

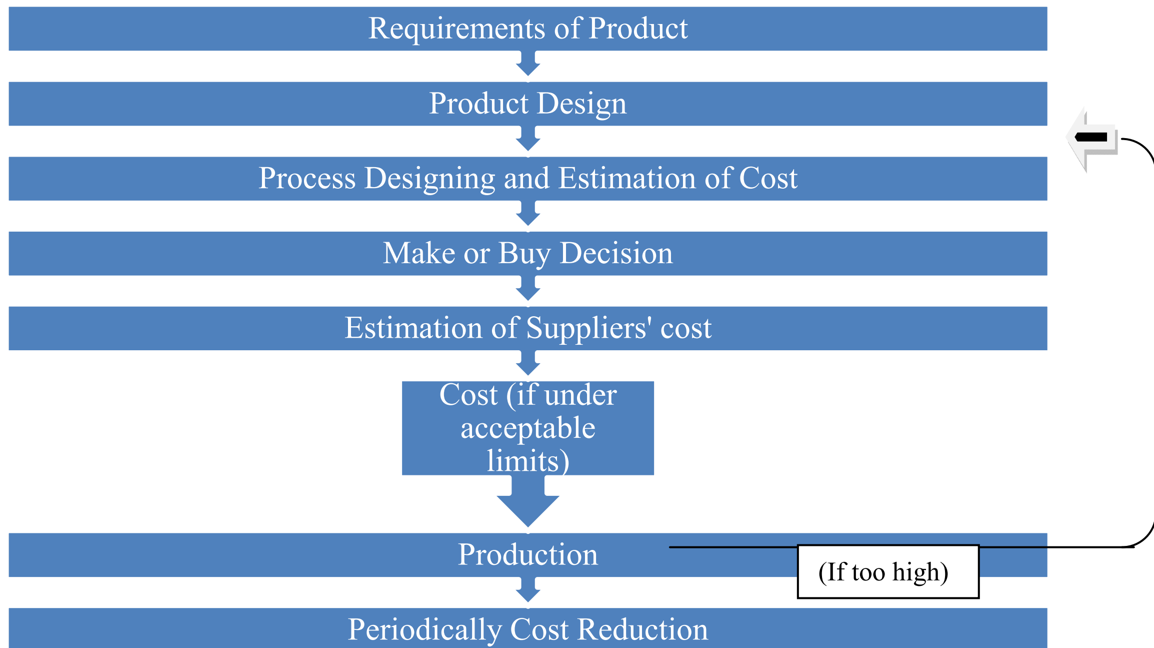
1. It helps in attaining the objectives of organization as well as increasing customers' satisfaction.
2. Products are designed and innovated to match the customers need.
3. It helps in cost reduction and cost control.
4. It helps in inculcating team spirit among the employees associated with the development of product in any way.
5. The quality of product improves gradually.
6. It helps in identifying the market opportunities and make best out of them for the organization as well as for its customers.

7. It integrates all the efforts in the organization from top to bottom.

3.31 Distinguish between Traditional Costing Approach and Target Costing Technique

Target costing approach is much different from the Traditional Costing Approach which can be examined through the processes of both the techniques given below.

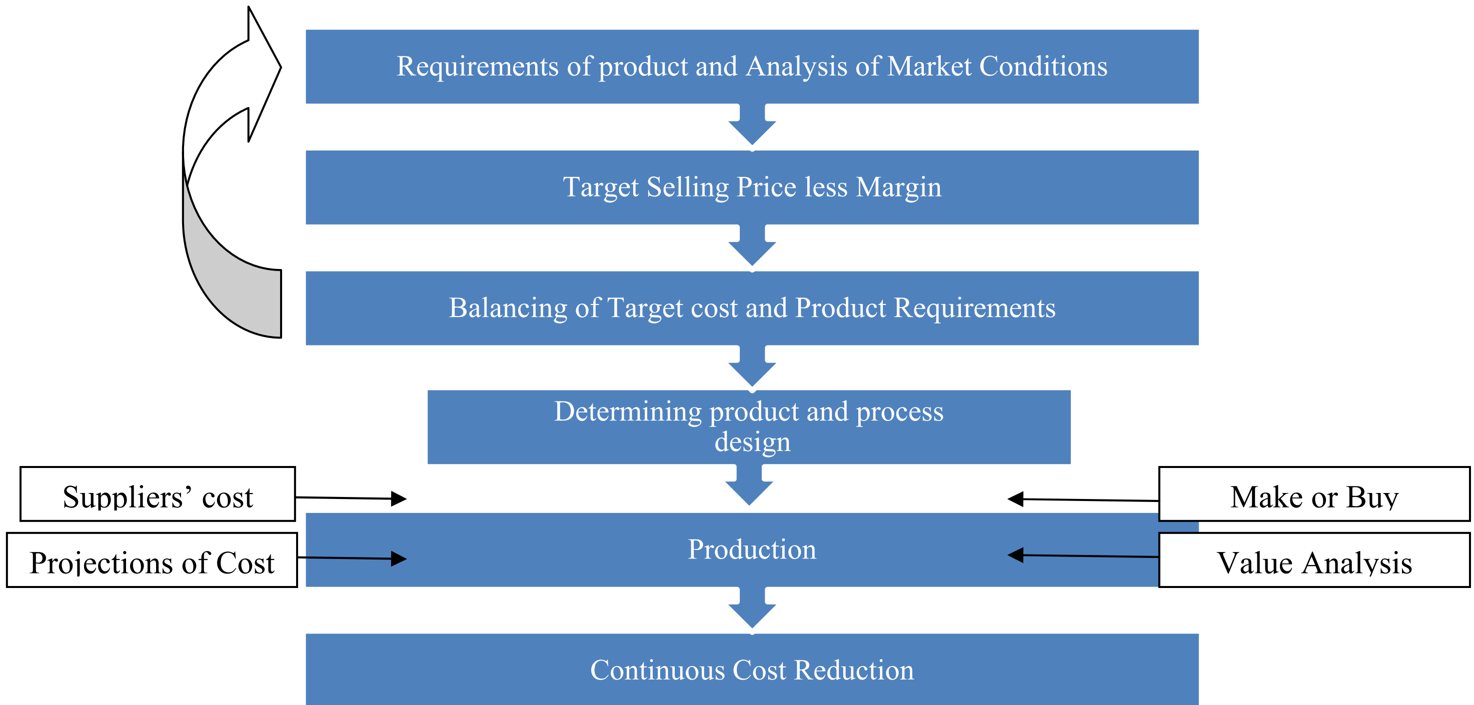
TRADITIONAL COSTING APPROACH



Difference		
Points	**Target Costing**	**Traditional Costing**
Concept	A target margin is deducted from target selling price to reach the target cost.	A target margin is added to the cost of production to determine selling price.
Market Factors	Target Costing considers market factors such as competition, customers value system, etc.	Traditional Costing does not consider market factors.
Price/Cost Determination	Selling price determines the target cost.	Cost of production determines the selling price.
Dependent Variable	Target cost of the product is the dependent variable as it depends upon the selling price and desired profit margin.	Selling Price of the product is the dependent variable which depends on the cost of production and desired margin.

Independent Variable	Selling Price.	Cost of production.
Control	Efforts are made to reduce the cost to the minimum level.	Efforts are made to keep the cost to within the standards fixed.
Time	Cost reduction process is continuous.	Costs are reduced periodically.

TARGET COSTING TECHNIQUE



3.32 Steps to be followed for installing Target Costing Technique

In order to have desired results, the below steps are to be followed while installing target costing technique.

1. **Market Research**. Conducting market research is the first step at which market factors affecting product are analyzed such as customers' tastes and preferences, their value system, company's status in the market, competition, market share, etc. All these factors will help in the determination of target price.
2. **Conversion of customers requirements into Product Features**. On the basis or information collected at the previous step, a company will try to develop a product which will satisfy the customers' needs and wants.
3. **Determination of Target Price and Cost.** The information collected at the first step will help in determination of market-driven price which will be profitable to the company as well as payable by the customers. A desired margin is deducted from the target price to determine the target cost of the product.

Target cost = Target Selling Price – Target Margin

4. **Comparing Target Cost and Product Features.** Target cost will only be finalized after determining the product features expected by the customers and balancing them with the proposed target cost. For this purpose, various techniques can be used such as conjoint analysis, etc.

5. **Conducting Value Engineering Process.** Value Engineering Process refers to the process of identifying various opportunities for modification of designs such as product design, component design, etc. without compromising with the quality of the product. To reach the target cost, a company should conduct value engineering process as it is difficult to change the target price so efforts should be made to achieve the target cost by doing necessary modifications.

6. **Necessary Improvement in Organisational Structure and Product Design.** In this step, to balance the target cost and product features necessary changes are made in the organizational structure i.e. improvement in strategies, modifications of processes, etc. and at the same product design will also be improved. On the basis of these changes, various alternatives are developed and a suitable one will be selected.

7. **Top Management Approval.** A report is prepared containing all the information related to the product such as target price, margin and cost, product design, elements of cost, cost drivers, etc. which will be sent to the top management for the approval and after getting the approval commercialization will be done.

8. **Accounts Maintenance.** A separate account book should be maintained to record all the expenses and the total cost of production. Also, it should be examined whether the cost is within the limits or not, if not, necessary actions should be taken.

9. **Follow up.** Continuous appraisal is necessary to have cost of production within the target limits. For this, actual cost should be compared with the target cost and if in case of any deviations found, it becomes necessary to take corrective actions.

3.33 Tools and Techniques

There are various tools and techniques which supports target costing technique to achieve the objectives. They are as follows:

1. **Activity Based Costing**. Overhead costs is a major component of total cost of the product and ABC is a costing technique which helps in better allocation of indirect and overheads costs related to various products or services by establishing relationship between products, activities performed and relevant overhead costs and hence, helps in cost reduction.

2. **Value Chain Analysis.** Value Chain Analysis means in depth study of all the activities from procurement of raw material to the disposal of product so that value added by each activity can be assessed and non-value activities would be eliminated resulting in the cost control and cost reduction.

3. **Value Engineering Process.** Value Engineering Process refers to the process of identifying various opportunities for modification of designs such as pro+duct design, component design, etc. without compromising with the quality of the product. To reach the target cost, a company should conduct value engineering process as it is difficult to change the target price so efforts should be made to achieve the target cost by doing necessary modifications.
4. **Just in time Approach.** This approach belongs to inventory management invented by the Japanese companies whereby raw-materials and other goods are ordered exactly when they are needed in the process of production in order to reduce the inventory cost and hence, the overall cost.
5. **Total Quality Management.** This approach aims at maintaining the quality of goods and services by improving the business operations such as product and services design, processes, work climate, etc. on continuous basis to increase the customer satisfaction.
6. **Brainstorming.** Brainstorming is a technique where a number of experts from different fields such as customer, supplier, investor, etc. are grouped together and a problem is given to them to find out the best possible solution which may be related to the ways of cost reduction, cost control, modification of processes, etc. Ideas and suggestions are invited from all of them which results in a number of alternatives and the best will be implemented.

3.34 Late development of Target costing

Target costing technique was originated way back but it was noticed in 90's only due to some reasons such as:

i. It focuses more on the new product development instead of existing products.

ii. It is mostly practiced by the Japanese organisation which kept the use of this technique secret from others.

iii. Also, the just in time technique overshadows the target costing technique due to which it got second position.

3.35 Problems

Target costing technique is used by a lot of companies such as Honda, Boeing, Kodak, etc. but still companies are facing various problems while using this technique such as:

i. The development process under this technique is too lengthy as it requires a number of alternations in product design.

ii. It requires a large amount of cost reduction which results as a burden to the employees working at various departments.

iii. This technique requires team work which becomes difficult for large organisations.

iv. To achieve the target cost sometimes company uses low quality raw material and inferior design.

3.36 Life Cycle Costing: Introduction

Life cycle costing is defined as the total cost of a product for its entire life. It is long run cost which include the cost related to all stages of a product life cycle such as in development stage massive

expenses is incurred on research and development of the product, introduction stage, a firm has to incur on promotional activities, during growth and maturity stage huge expenses is incurred on manufacturing and distribution and when product is in its declining stage costs are incurred to replace, retain or shut down. Life cycle cost is a decision making tool which help management to choose among different alternative on the basis of cost incurred and also to control cost.

According to Federal Highway Administration of USA, "A process for evaluating the total economic worth of a usable project investment by analyzing initial costs and discounted future costs, such as maintenance, use, reconstruction, rehabilitation, restoring, resurfacing, and disposal costs, over the life of the project segment."

According to Australian and New Zealand Standard 1999, "A process to determine the sum of all expenses associated with a product or project, including acquisition, installation, operation, maintenance, refurbishment, discarding and disposal costs."

According to Investopedia, "Whole-life cost is the total expense of owning an asset over its entire life, from purchase to disposal, as determined by financial analysis. It is also known as a "life-cycle" cost, which includes purchase and installation, design and building costs, operating costs, maintenance, associated financing costs, depreciation and disposal costs. Whole-life cost also takes into account certain costs that are usually overlooked, such as those related to environmental and social impact factors."

3.37 Features of Life Cycle Costing

Following are the basic features of life cycle costing:

- The life cycle of a product outlines the costs and revenues for different period of time.
- Life cycle costing relates to whole life of a product.
- It involves total expenses incur during the entire life of a product.
- It divides a product life into various stages such as development, introduction, growth, Maturity and decline stage.
- It also considers the opportunities and threats during the life cycle of a product.
- It entails research and development expenditure.
- Life cycle of a product may be increased through timely and efficient decision by management.

3.38 Applications or Uses of Life Cycle Costing

The various application of life cycle costing can be explained as follow:

- It is used for infrastructure projects such as railway, highways, industry infrastructure and airports etc.
- It also uses in value chain engineering and selection of material and assets related to any project.
- Uses in various decisions making of management like selection of best one among different options available.

- Utilize for cost control in production process
- Utilize for planning, strategy and policy formulation etc.
- Apply in analysis of different cost drivers.

3.39 Effects of Life cycle costing on different stages

The various stages and the costs and revenues thereto can be defined as under:

Stages of life cycle of a product	**Cost related to each stage**	**Costing Technique used in each stage**	**Sales in each stage**	**Profit or loss**
Development stage	Manufacturing cost is nil but huge expenses on research and development	Target costing is used	Sale is nil	No profits due to no sale, but huge losses due to huge expenses on Research and development
Introduction stage	High manufacturing and advertising expenses	Kaizen costing concept is used	Low sale due to high price	Losses due to high advertisement cost and low sale
Growth stage	Per unit Production cost diminish due to increasing sale, distribution costs increase	Kaizen costing concept is used	Sales increase and per unit price decreases	Profits increase
Maturity Stage	Constant production costs, high promotional expenses and increase product support costs	Standard costing technique is used	Sale increase by decreasing rate, reduce per unit sale price	Profits increase by decreasing rates
Decline stage	Increase in production costs due to less demand, costs on replacement and innovation	Standard costing technique is used	sales decrease	Profits decrease and turned out into losses.

3.40 Objectives of Life Cycle Costing

Life cycle costing helps in providing input for decision making related to an asset or product as designing, manufacturing, setting up, procurement, maintenance, renewal and removal. Following are the some objectives of life cycle costing:

- To minimize total cost of a product
- To make decision related to product cost
- To manage the cost drivers

- To estimate the return from a product
- To perk up the performance of a product

3.41 Advantages or Benefits of Life Cycle costing

It is helpful in various decisions of management. Benefits of life cycle costing can be defined as under:

Analysis of cost and benefit: Life cycle costing helps in analyze the various alternatives on the basis of cost and benefits received and help in choosing the best one.

Precise decisions: On the basis of cost benefit analysis realistic decision related to a product is taken which also increase the profits.

Calculation of total cost: With the use of life cycle costing, a company can calculate the total cost related to a product during its whole life and may take decision accordingly.

Consider all stages: It also considers the cost involving in each and every stages of life of a product such as costs involved in development stage, introduction, growth and maturity declining stage.

Forecasting: It also helps in planning of future expenditure as expenses incur for research and development, promotional expenses etc.

Cost control: It analyzes the cost and benefits derived from entire life of a product. Therefore, it easily figures out the areas where cost can be controlled or reduced.

Cost awareness: It increases awareness of management while selecting a strategy or programme on the basis of cost because manager can easily define the cost drivers and the areas which yield maximum benefits.

3.42 Demerits of Life Cycle Costing

Life cycle costing is criticized on the following criteria:

More time: It is a time consuming process as it takes more time to calculate cost over the entire life of a project.

Change in technology: It selects a product which has long life, but due to change in technology, the life of the product become shorter which proves our estimation wrong.

Tedious: Calculation of costs under life cycle costing is a tedious job because it takes various costs in computing the total cost and collects the data accordingly.

Accuracy: If data is not accurate relate to a product, the cost calculated on the basis of life cycle costing is inaccurate.

Not appropriate for decision: It is not the only method on which management takes decisions. Management uses several techniques along with life cycle costing to take decision related to a product.

3.43 Costs involved in Life Cycle Costing

Life cycle costing considers various costs while evaluating a product which are as under:

Purchase cost: It is also known as acquisition cost. It involves the designing or development expenses incurred for the procurement of a product.

Operating costs: It involves the cost during the operational life or procurement of a product such as repair cost, downtime cost, cost of spare parts or failure etc.

Maintenance costs: It relates to cost of correction, prevention and prediction and other maintenance activities.

Disposal costs: It involves the replacement cost of product during its declining stage or the expenses incurred on renewal or innovation of a product.

Other cost: It also considers some other costs like opportunity cost, inflation cost etc.

3.44 Estimation of Life Cycle Costs

The life cycle cost of a product or an asset can be computed by the following formula:

Life Cycle Cost = Preliminary capital costs + operating costs during entire life + Estimated maintenance costs during entire life + Estimated rehabilitation costs + Estimated disposal costs - Estimated residual value.

3.45 Process of Life Cycle costing

It includes the following process for analysis:

Identify objectives: Firstly, a firm should decide the reasons of adopting life cycle costing. A company should identify that for which product and for what time period, life cycle costing will be dealt.

Develop a plan: Life Cycle costing process starts with planning about the goals, scope, budget and how to address a problem, changing circumstances, life of product etc.

Identify costs: The firm should identify various cost involved in life cycle costing such as operating cost, maintenance cost etc and also identify the cost drivers.

Prepare cost models: The next step is to prepare a cost model on the basis of simplicity and variability. The model should include the costs related to repair, replacement, renewal etc.

Analysis of options: The next step is to choose the best one among different options on the basis of costs and revenue analysis. The risk factor is also considered.

Analysis on the basis of techniques: In life cycle costing basically two technique break even analysis and sensitivity analysis are used. The product should be analyzed on the basis of these techniques.

Preparation of Life Cost Analysis: Under life cycle costing analysis should be done on the basis of real time and real cost. To calculate the real cost, capital cost should be replaced with actual cost.

Implementation and Monitoring: The actual performance under life cycle costing will be compared with planned objectives and identify the gaps to improve them.

3.46 Methodology of Life Cycle Costing

Life cycle costing is a technique to estimate the total cost for decision making for the complete life of a product. The following methodology should be developed to obtain required results:

Cost break down structure: Cost breakdown structure relates to divide the product life into different phases and compute the cost of each phase. Then on the basis of each stage cost, total cost will be considered.

Time horizon: The total life period of a product is known to analyse on the basis of life cycle costing.

Identifying different cost: One more aspect is to identify the different costs related to life cycle costing as future cost, operating cost etc.

Inflation: LCC relates to future period which is uncertain. So, the required estimation should be done for inflation.

3.47 Points to be remembered for life cycle costing:

- It is a key task of top management.
- This method is used to attain higher profits using scarce resources.
- Trade off between cost and revenues are necessary.
- Probability method should be used to estimate the life and cost for the future.
- Accurate and reliable data is necessary to conclude.

3.48 QUESTIONS FOR PRACTICE

Short Answer Type Questions

1. What is meant by value chain analysis?
2. Write any two objectives of value chain analysis.
3. Discuss various advantages and limitations of value chain analysis.
4. Narrate briefly the primary activities involved in value chain analysis. [*M.Com., M.D.U. (2nd Sem.) 2016*]
5. What do you understand by Activity Based Costing?
6. Explain the difference between ABC and Traditional Costing.
7. Discuss various advantages of ABC.
8. Define Target costing and its objectives.
9. Explain the difference between Target costing and Traditional Costing.
10. Discuss various advantages and limitations of Target costing.

11. ABC Ltd. analyzed the market conditions and found out that it can charge ₹999 per unit for a toy. Its desired profit margin is 30% of selling price. You are required to determine the target cost of a toy.

(Ans. ₹699 approx.)

12. State the advantages of life cycle costing.

13. What are the main principles of life cycle costing?

14. Give the classification of cost of quality.

15. What do you understand by quality costing.

Long Answer Type Questions

1. Describe the concept of value chain analysis and its process.
2. What do you understand by value chain analysis? Explain the activities involved in it.
3. Describe the meaning, objectives and the process of value chain analysis.
4. Discuss the process and managerial application of value chain analysis. [*M.Com., M.D.U. (2nd Sem.) 2016*]
5. What do you understand by Activity based Costing? Explain its advantages and disadvantages.
6. Discuss the various steps involved in Activity based costing and its managerial application.
7. Evaluate the effectiveness of ABC method on the basis of its advantages and disadvantages.
8. Describe the concept of Activity based costing and how it is different from traditional costing system.
9. Infinity Ltd. manufactures two products A and B and relevant data is as follows:

Products	Annual output (units)	Machine hours (per unit)	Direct labour hours(per unit)	Total numbers of orders handled	Total number of set-ups
A	10,000	4	2	20	20
B	14,000	2	1	40	30

Annual overhead costs:	₹
Machine activity	4,00,000
Production run set-ups	40,000
Orders handling	55,000
	4,95,000

You are required to calculate the per unit overheads of each product i.e. A and B using:

i. Direct Labour Hour Rate Method for absorption of overhead costs.
ii. ABC technique absorption of overhead costs.

10. A company produces two products X and Y and relevant data is as follows:

Products	Annual output (units)	Machine hours (per unit)	Total numbers of purchase orders	Total number of set-ups
X	20,000	2	10	10
Y	4,000	1	25	15

Annual overhead costs:	₹
Machine activity	2,00,000
Production run set-ups	40,000
Orders handling	15,000
	2,55,000

You are required to calculate the per unit overheads of each product i.e. A and B using:

iii. Traditional method.

iv. ABC technique.

11. What do you understand by Target costing? Describe the process of Target costing and problems faced by this technique.

12. Write the steps involved in implementation of Target costing and various tools and techniques which compliment Target costing.

13. Differentiate between Target costing and Traditional Costing. Also, advantages and reasons for late development of Target costing.

14. What are features and objectives of Target costing? Also, discuss the process of Target costing.

15. Explain the methodology of life cycle costing.

16. Narrate the applications, benefits and drawbacks of life cycle costing.

17. Write note of quality circle.

18. What is Total quality management? Define its tool and techniques.

Suggested Readings:-

1. J.K. Aggarwal, R.K. Aggarwal, M.L. Sharma – Accounting for Managerial Decisions– Ramesh Book Depot, Jaipur.
2. R. Kishore–Advance Management Accounting–Taxman allied Services Pvt. Ltd.
3. M.Y. Khan, P.K. Jain–Management Accounting–Tata McGraw Hill
4. Horngren, Sundem, Stratton–Introduction to Management Accounting-Pearson Education
5. S.N. Mittal–Accounting & Financial Management – Shree Mahavir Book Depot, Nai Sarak, New Delhi.
6. Anthony, Robat N., Hawkins and Merchant Management Ac

UNIT-4

Decisions Involving Alternate Choices

Objectives of the Unit

- To have insight into the meaning of marginal cost, marginal costing tools and techniques.
- To provide knowledge about the concept Decision Making, its process and costs associated to decision making.
- To enhance awareness about Decision Involving Alternate Choices which are very important not only for individual organizations but also for a society or nation as a whole.
- To familiarize the concept of Responsibility Accounting, its kinds, process etc.
- To know the meaning of Responsibility Accounting and its uses.
- To understand the concept of reporting to management, its types, format of effective reporting, etc.

Structure

4.1 Introduction
4.2 Marginal Costing
4.3 Characteristics of marginal costing technique
4.4 Techniques of marginal costing
4.5 Decision Making
4.6 Process of decision making
4.7 Cost Related With Decision Making
4.8 Decision Involving Alternate Choices
4.9 Responsibility Accounting - Introduction
4.10 Nature/Characteristics of Responsibility Accounting
4.11 Kinds of Responsibility Centres
4.12 Process of Responsibility accounting
4.13 A Format of Performance Evaluation on the Basis of Responsibility Accounting
4.14 Significance of Responsibility Accounting
4.15 Disadvantages of Responsibility Accounting
4.16 Reporting to Management - Introduction
4.17 Features and characteristics of Reporting to management
4.18 Significance/Functions of Reporting to management
4.19 Factors to be considered for good reporting
4.20 Types/forms of reports
4.21 Format of an Effective Report
4.22 Questions for Practice

4.1 Introduction

Marginal costing is an important tool for cost control, business decision making and to solve multiple business problems. It is also recognized as variable costing technique. Generally, the total cost of a business is divided into two parts fixed cost and variable cost. Fixed cost is also known as period cost because it is not change with the change in production up to a certain level. On the other hand, variable cost changes directly with the change in production and thereby termed as product cost. This variable cost is termed as marginal cost which is based upon the principle that fixed cost is uncontrollable and not included in cost of production for taking decisions. Therefore, in marginal costing technique valuation of closing stock is done on the basis of variable cost.

4.2 Marginal Costing

Marginal costing is a technique of calculation of marginal cost and the result of change cost and profit with change in volume. The decision is taken after considering the variable cost. The basic difference between marginal and absorption costing is that in absorption costing, value of closing stock is calculated on the basis of total cost whereas, in marginal costing, value of closing stock is calculated on the basis of marginal or variable cost.

For example, if a company produce 100 units at variable cost of Rs. 20 per unit and fixed cost of Rs. 1000, then total cost will be Rs. 2000 + Rs. 1000 = Rs. 3000, but if company produces one extra unit then only variable cost will change, fixed cost remains the same. Now total cost will be Rs. 2020 + Rs. 1000 = Rs. 3020. So, the decision will be taken on the basis of variable cost. This technique is known as marginal costing and extra cost of production of one unit i.e. Rs. 20 is known as marginal cost.

According to the Institute of Cost and Management Accountants, London, "Marginal Costing is the ascertainment, by differentiating between fixed costs and variable costs, of marginal cost and of the effect of profit of changes in the volume or type of output."

Marginal costing has a positive relationship between variable cost and production units. It depends upon the rule that variable cost must be realised. The difference between the sale and variable cost is known as contribution. The profit under marginal costing is calculated as follow:

	Sales	××××××
Less:	Variable cost	(××××××)
	Contribution	××××××
Less:	Fixed cost	(××××××)
	Profit/Loss	××××××

Marginal cost equation

$S - V - F = \pm P$

$S - V = F \pm P$

$S - V = C = F \pm P$

Where, S = Sales

V = Variable cost

F = Fixed cost

C = Contribution

P = profit

4.3 Characteristics of marginal costing technique

Marginal costing technique separates the fixed and variable cost and take decision on variable cost basis. The major features of marginal costing technique are as follow:

- It divides total cost into fixed and variable cost.
- It is not an independent costing method such as job costing, process costing. It is an important tool for management decision making.
- Variable cost is known as product cost whereas, fixed cost is termed as period cost.
- In marginal costing contribution is a significant concept used for decision making
- Valuation of closing stock and work in progress is done on the basis of variable cost.

4.4 Techniques of marginal costing

The techniques or tools or elements of marginal costing are as follows:

1. Contribution: Contribution is the excess of sales over variable cost. It is a major tool for decision making in marginal costing. Greater the contribution, higher will be the profits. It is also termed as gross margin. Contribution concept helps in determining the sale price, break even analysis, selection of profitable product mix, determining the key factor or various other management decisions. It can be expressed as

Contribution = Sales – Variable cost

Contribution = Fixed Cost + Profit

Or, C = S – V

C = F + P

2. P/V ratio: Under the concept of contribution, profit volume ratio is also calculated. Profit volume ratio or P/V ratio is also known as gross margin ratio or contribution ratio. It is the relationship between contribution to sales. It can be calculated as follow:

$$\text{P/V ratio} = \frac{S-V}{S} \times 100$$

$$\text{Or, P/V ratio} = \frac{C}{S} \times 100$$

$$\text{Or, P/V ratio} = \frac{F+P}{S} \times 100$$

Or, if two years sales and profits are given then,

$$\text{P/V ratio} = \frac{\text{Change in Profit}}{\text{Change in Sales}} \times 100$$

3. Break Even Point Analysis: Generally Break Even Point analysis is also termed as Cost Volume Profit Analysis. It is key element of marginal costing technique. In narrow term, it is defined as no profit or no loss point and in broader term, it is defined as the association between cost, sale and profit. The following terms are also studied under Break Even Point analysis:

(a) Break Even Point (BEP): Break Even Point is that point of sales at which firm has no profit or no loss. In other words, total sales and total cost or firm are equal. The sale above the break even will generate profits for the firm. It is also known as equilibrium point or critical point. It can be computed as under:

$$\text{BEP (in units)} = \frac{\text{Fixed Cost}}{\text{Sales – Variable Cost}}$$

$$\text{BEP (in units)} = \frac{\text{Fixed Cost}}{\text{Contribution per unit}}$$

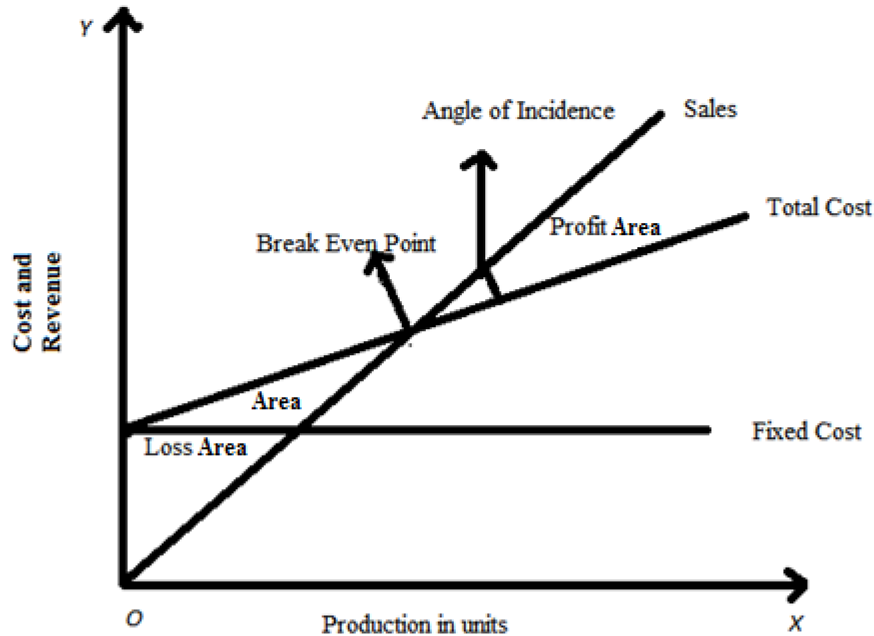
It is to be noted that if breakeven point is calculated in units, then sale and variable cost is taken per unit.

$$\text{BEP (in amount)} = \frac{\text{Fixed Cost}}{\text{Sales – Variable Cost}} \text{ X Sales}$$

$$\text{BEP (in amount)} = \frac{\text{Fixed Cost}}{\text{Contribution}} \text{ X Sales}$$

$$\text{BEP (in amount)} = \frac{\text{Fixed Cost}}{\text{P/VRatio}}$$

(c) Graphical Presentation of BEP: Break Even analysis can be portray through graph as follow:



(b) Margin of Safety (MoS): The actual sales over the Break Even point sales are known as margin of safety. Margin of safety indicates that sales above the Break Even point sale will generate profits and sales less than this point will be the reason of loss. The formula of margin of safety is

MOS (in units) = Actual Sales (in units) – BEP Sales (in units)

MOS (in amount) = Actual Sales – BEP Sales

MOS (in amount) = $\frac{\text{Profit}}{\text{P/VRatio}}$

(c) Angle of Incidence: It is the angle between the total cost and total sales line or where the total sales and total cost line intersect each other. Higher the angle, higher will be the profits and margin of safety and vice versa.

4. CVP Analysis: Cost Volume Profit analysis is method to know the association between cost, sales and profit. All three are related to each other as if change in cost affects the volume of sales and profits. If profit changes i.e. increase or decrease, it will also change the further sales and variable cost will vary with the units of production. Similarly, if sales will fluctuate, then cost and profits will also fluctuate. CVP Analysis helps the manager to control the cost, profit planning decision, maintain the desired level of profit and in many other decisions related to business.

5. Key Factor: Key factor or limiting factor is that factor which is necessary for production but accessible in limited quantity or scarce. So, the management has to take the decision after considering the limiting factor. Key factor vary from company to company. For example, material may be limiting factor for one company if it is not easily available to that company. On the other hand, labour or machinery or technology etc. may be the key factor for other company. The decision on the basis of key factor is taken up by using the contribution concept.

4.5 Decision Making

Decision making is defined as a cognitive process of taking decisions by choosing best option among different alternatives. It is a method to identify the various alternatives related to problem solving and selecting the best one. It is a process which makes decisions more deliberate and profitable. Marginal costing technique is used by the management to make rational decisions. For example, decision related to make or buy any product, deciding the optimum sales or product mix, etc.

Although, environment is dynamic and no decision is helpful in every situation. Decision making is an iterative and continuous process. It is the duty of top management to take appropriate decision in uncertain or risky situations which require knowledge, skills and experiences.

4.6 Process of decision making

Management has to follow systematic approach to take worthy decisions. No method of decision making fits to every situation. The following steps may be adopted while taking a decision in business:

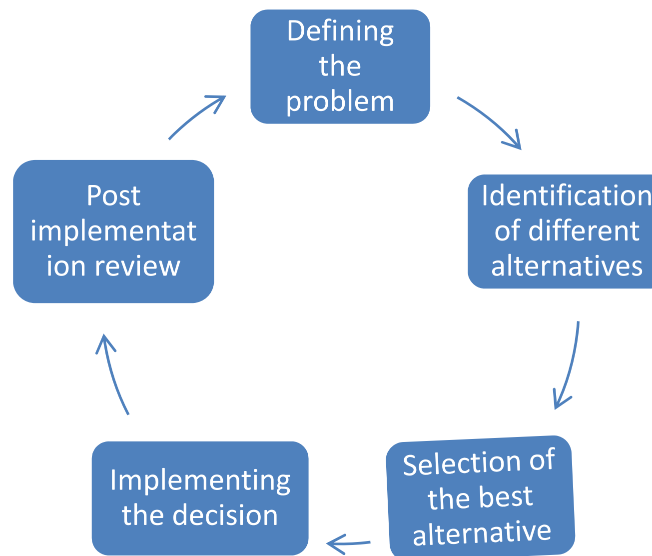


Figure: Process of decision making

Defining the problem: While taking a decision, it is necessary to identify the problem first. If problem is well defined, then fifty per cent of solution may be achieved. The problem should be clear and measurable so that timely decision may be taken.

Identification of different alternatives: After defining the problem relevant information is collected to identify the potential solutions to the problem. There may be more than one alternative for the solution of a problem which can be identified through market research, consultant advices or various external sources. Management has to consider all possible alternatives to take appropriate decisions.

Selection of the best alternative: The next step is to evaluate and selecting the best alternative among different ones on the basis of risk return or cost benefit analysis. Various quantitative and qualitative measures based upon the facts and statistics should be considered to select the best alternative.

Implementing the decision: After identifying the most suitable solution to the problem, the decision is implemented to sort out the problem.

Post implementation review: The next step is to appraise the result after the execution of the decision to see whether the problem is solved or not. If there are any discrepancies, suitable action should be taken to rectify the errors.

4.7 Cost Related With Decision Making

While taking decisions in the business, various costs are associated with the decisions, some of which are as follow:

Relevant Cost: These are future costs which can be affected by change in decision of management. The relevant cost is variable cost which may be incremental or avoidable. While comparing different alternatives, if cost changes, then that particular cost will be relevant cost. For example, if a firm purchased machinery costing Rs 10,000 and now its book value remains Rs 1,000. The machinery became obsolete but, can be sold for Rs 2000 after modification which will cost Rs 500. Here, Rs. 2000 and Rs. 500 both will be relevant cost.

Differential Cost: It can be defined as an increase or decrease in total cost after the decision of management. It may be incremental or decremental cost. It is an important term for decision making. If total cost increases, when decision is changed from one alternative to another, it is termed as incremental differential cost. Conversely, if total cost decreases, when decision is changed from one alternative to another, it is termed as decremental differential cost.

Opportunity Cost: Opportunity cost may be termed as benefit sacrificed while choosing one alternative over other. If while choosing an alternative profits are forgone, such sacrificed profit is known as opportunity cost. For example, a producer can produce either chair or table. The value of one chair is Rs. 500 and value of table is Rs. 700. The producer decides to manufacture chair instead of table as resources are limited. The sacrificed value of table Rs. 700 over chair is known as opportunity cost.

Shut down Cost: It is fixed cost which is incurred during the closing down of a division, department or business. Since if production is not done, variable cost is not incurred. But, some fixed cost is related with the business such as salary, depreciation etc. which are unavoidable, are defined as shut down cost.

Imputed Cost: These are the costs which are not actually incurred in cash. For example, interest on capital which is not actually paid, but essential for the management decision.

Out of Pocket Cost: The cost which is paid in cash is known as out of pocket cost such as cost of material, labour, expenses, etc. The expenses which are not paid in cash as depreciation, is not included in out of pocket cost.

Sunk Cost: It is the cost which cannot be collected if expended. These costs are irrelevant for management decisions since they have been incurred. The decisions which are irreversible, cost associated to them are known as sunk cost i.e. investment in fixed assets.

Escapable Cost: The cost which may be avoided during production process is known as escapable cost and which cannot be avoided is termed as unavoidable cost.

4.8 Decision Involving Alternate Choices

Managers have to take various timely decisions out of various alternatives. Marginal costing is a technique to take effective decision such as profit planning, deciding optimum product policy, make or buy decision of a product, etc. Following are some important management problems regarding which management has to take decision:

- Make or buy decision
- Expand or buy decision
- Expand or contract decision
- Change vs. status quo
- Retain or replace
- Exploring new markets
- Optimum product mix
- Adding and dropping a product

Make or buy decision

A firm has to take decision whether to purchase a product or manufacture it itself. If a firm manufactures a product or part, thereof then it has to incur some fixed or variable costs and if, firm purchases the same from market, it has to choose the supplier by taking into consideration the availability of material, financial soundness, regular supply and reliability of supplier. The decision should be taken after comparing the cost and benefit received by two alternatives. If cost of purchase is less than the marginal cost of manufacturing, then it is advisable to purchase the product from the market instead of manufacturing it by the firm.

Example 4.1 A company finds manufacturing cost of a product in its firm is Rs. 10 each and if purchase from the market, then cost will be Rs. 8 each with regular supply. Give the suggestions to the company whether to make or buy the product. The cost component of making a product is as follow:

	Rs.
Direct Material	4
Direct Labour	2
Variable expenses	1
Fixed expenses	3
Total	10

Solution: By putting aside the fixed cost which has to incur, the decision should be taken on the basis of marginal cost.

Marginal cost of product manufactured	
	Rs.
Direct Material	4
Direct Labour	2
Variable expenses	1
Total	7

Since the marginal cost of product manufacturing i.e. Rs. 7 is less than the cost of purchase i.e. Rs. 8, it is advisable to manufacture the product as it gives some contribution to the firm.

Expand or buy decision

Due to limited capacity, a company may purchases some component of its product from market, but if it wants to expand its capacity, then such decision will be taken after considering the cost and benefits involved in such decision. Since expansion requires huge capital expenditure as well as opportunity cost, the decision should be taken if expansion yields definite return.

Expand or contract decision

When firm expands its business operations, it results in various economies such as reduction in fixed cost, increased capacity, maximising the consumer specification, etc. On the contrary, a firm will do contraction in its operations if it results into diseconomies. The expansion or contraction may further create various problems such as communication barriers, increase in cost, division of authority and responsibilities etc. The decision of expansion should be taken if it results in profits as expansion includes some fixed cost also.

Example 4.2 A firm wants to expand its plant which increases its fixed cost by Rs. 20,000. The present fixed cost is Rs. 50,000. The current capacity of plant is to produce 10,000 units in a year which increased by 50% after expansion. Presently, the variable cost is Rs.10 per unit which will go down by 20 percent after expanding plant capacity. Selling price remains unaffected via expansion which amounts to Rs. 20 per unit. You have to suggest whether the firm should expand its plant capacity or works with its present capacity.

Solution: The profit of two alternatives is computed as follow:

Unit produced after expansion = 10,000 + 10,000 × 50% = 15,000 units

Variable cost after expansion = 10 - 10 × 20% = Rs. 8 per unit

Fixed cost after expansion = Rs. 50,000 + Rs. 20,000 = Rs. 70,000

	Present Position Rs.	After Expansion Rs.
Sales		
10000 × 20	2,00,000	
15000 × 20		3,00,000
Less: Variable cost		
10000 × 10	1,00,000	
10000 × 8		80,000
Contribution	1,00,000	2,20,000
Less: Fixed cost	50,000	70,000
Profit	50,000	1,50,000

It is clear from the example that profit after expansion increased, so the firm should take the decision of expansion of its plant.

Change vs. Status quo

Sometimes management has to take decision regarding its policies whether they should be changed or not. For example decision regarding change in selling price, asset purchase or hire on lease, to accept or reject a specific order, make capital expenditure or not. For such decisions, a manager should take into consideration the different costs and benefit derived by change in policy. Differential cost may be interest on capital, depreciation. Increase in variable and fixed cost, etc. and differential gain may be tax benefits, cost saving and increase in contribution, etc.

Example 4.3: XYZ Ltd. Produces 10,000 pens and its cost budget is given below:

	cost Rs.
Material	4
Wages	2
Manufacturing expenses	3
Variable overhead	1
Total	1,00,000
Fixed overheads	₹ 60,000
Selling Price	20

If company increases its selling price by 10% to do saving in manufacturing expenses by Rs. 1 per unit and variable expense by Rs. 0.5 per unit, then sale will go down by 20%.

On the other hand if company decreases its selling price by 5% to increase the sale, then sales volume will increase by 10 percent, but additional sales will increase its fixed cost by Rs. 7000 and reduce its material cost per unit to Rs. 2. Suggest which proposal should be accepted.

Solution:

	Present position 10000 units	Proposal I 8000 units	Proposal II 11000 units
Selling price per unit	₹ 20	₹ 22	₹ 19
Sale	2,00,000	1,76,000	2,09,000
Less: Material	40,000	32,000	22,000
Wages	20,000	16,000	22,000
Manufacturing expenses	30,000	16,000	33,000
Variable overhead	10,000	4,000	11,000
Contribution	1,00,000	1,08,000	1,21,000
Less: Fixed expenses	60,000	60,000	67,000
Profit	40,000	48,000	54,000

If selling price is reduced, then, profit will be maximized. So, proposal II should be accepted.

Retain or replace

Sometimes management has to decide whether to retain or replace an asset in the business. Such problem can be solved through differential benefit and cost analysis. Differential cost may be interest on owner's capital, depreciation on assets, increase in variable and fixed cost, etc. and differential benefits may be tax saving, cost saving and increase in contribution, etc. Besides that, social cost and benefit should also be considered in such type of decisions.

Example 4.4: A firm purchased machinery worth Rs. 50,000 one year ago having no scrap value and useful life of five years. Firm charged depreciation on straight line basis. Now the firm wants to replace its old machinery to new one to reduce its operating cost Rs. 30,000 p.a. The cost of new machinery is Rs. 70000 with no salvage value and useful life of four years. The present level of sales and variable cost per annum is Rs. 1, 50,000 and Rs. 1, 10,000 respectively. Evaluate the profitable proposal.

Solution:

The present value of old machine is Rs. 40,000. If firm replaces the old machinery, then this Rs. 40,000 will be treated as loss.

Statement of comparative profitability of the two proposals for a period of four years

	Old machinery (₹)	New machinery (₹)
Sales (A)	6,00,000	6,00,000
Variable cost	4,40,000	3,20,000
Loss on writing off old machinery	40,000	40,000
Depreciation	--	70,000
Total cost (B)	4,80,000	4,30,000
Profit (A-B)	1,20,000	1,70,000

The total profits of four years will be increased by Rs. 50,000 (Rs. 1, 70,000 – Rs. 1, 20,000) or Rs. 12,500 per year. Therefore, it is appropriate for the firm to replace the old machinery to new one.

Exploring new markets

If plant capacity of a firm remains unutilised, then a firm should accept the additional order of production to enjoy the benefit of mass production. A firm should accept the additional order on less than the market price because there is no additional fixed cost incurred in such order and the decision should be taken on the basis of marginal cost, if total profits increased after accepting the order, firm should choose to take new order. The firm can utilise its idle capacity to fulfil the order from foreign market or from new domestic market.

Example: 4.5

BKL Ltd Company works on 50% capacity and sells 10000 units per month at a price of Rs. 100 per unit. Cost per unit of the product is given below:

	Rs.
Direct Material	30
Direct Labour	20
Variable expenses	10
Total	60

The fixed expenses incurred by the company are Rs. 200000. Now, the company received an order of 10000 units from foreign market at a price of Rs. 80 per unit. If company accepts the order, the fixed expenses will increased by 10%. State whether the company should accept the order or not?

Solution:

Presently, the company is working on 50% capacity, to produce additional 10000 units; it will have to work at 100% capacity.

Statement of comparative profitability

	At Present capacity 10000 units Rs.	Additional order 10000 units Rs.	Total
Selling price per unit	100	80	
Sale	10,00,000	8,00,000	18,00,000
Less: Direct Material	3,00,000	3,00,000	6,00,000
Direct Labour	2,00,000	2,00,000	4,00,000
Variable expenses	1,00,000	1,00,000	2,00,000
Contribution	4,00,000	2,00,000	6,00,000
Less Fixed Cost	2,00,000	20,000	2,20,000
Profit	2,00,000	1,80,000	3,80,000

The company should accept the order because total profits will increase after accepting the order.

Optimum product mix

If a firm produces more than one product then the problem arises regarding the product mix which maximises profits. The firm has to face this problem due to limited resources or capacity. A firm should adopt a sale mixture which generates higher profit or maximum contribution. While selecting the profitable mix, key or limiting factor should also be considered.

Example 4.6: The sales/production mix of a company is as follow:

1. 1000 units of product A and 1000 units of product B
2. 2000 units of product C
3. 1000 units of product A, 500 units of product B and 500 units of product C

The cost and sale per unit is given below:

	A Rs.	B Rs.	C Rs.
Direct Material	4	4	5
Direct Labour	2	4	3
Variable expenses	3	4	2
Selling Price	15	25	20

The fixed cost is Rs. 2,000. Calculate the profitable product mix.

Solution:

Statement of Marginal Cost

	A per unit Rs.	B per unit Rs.	C per unit Rs.
Selling Price	15	25	20
Less: Direct Material	4	4	5
Direct Labour	2	4	3
Variable expenses	3	4	2
Contribution Per unit	6	13	10

Selection of profitable mix

1. 1000 units of product A and 1000 units of product B	
Contribution	
A = 1000 × 6	6,000
B = 1000 × 13	13,000
Total Contribution	19,000
Less Fixed Cost	2,000
Profit	17,000
2. 2000 units of product C	
Contribution	
C = 2000 × 10	20,000
Less Fixed Cost	2,000
Profit	18,000
3. 1000 units of product A, 500 units of product B and 500 units of product C	
Contribution	
A = 1000 × 6	6,000
B = 500 × 13	6,500
C = 500 × 10	5,000
Total Contribution	17,500
Less Fixed Cost	2,000
Profit	15,500

Conclusion: The product mix 2 is more profitable as compared to other product mixes as it earns higher profit of Rs. 18000.

Adding and dropping a product

When a firm manufactures more than one product and one product has to be discontinued, then management should take decision on the basis of the contribution, effect on sales of other products and plant capacity, etc. Marginal costing technique helps in management decision making of adding or dropping a product or product line. The product which gives lesser contribution should be discontinued.

Example 4.7: Pearl Ltd. makes three products X – 6000 units, Y – 4000 units and Z – 2000 units. The cost per unit of each product is as follow:

	X Rs.	Y Rs.	Z Rs.
Raw Material	3	4	5
Direct wages	2	5	4
Variable overhead	4	3	2
Fixed expenses	6	5	7
Total cost	15	17	18
Selling Price	20	25	22

The firm decides to discontinue a product, and by doing so then the production of other products will go up by 50%. You are required to compute which product should be discontinued.

Solution:

Total fixed expenses of each product	Rs.
X (6000 × 6)	36000
Y (4000 × 5)	20000
Z (2000 × 7)	14000
	70000

Contribution per unit of each product	per unit Rs.
X (20 - 9)	11
Y (25 - 12)	13
Z (22 - 11)	11

(1) If product X is discontinued, production of Y and Z will be increased by 50% each. Production of Y and Z would be 6000 units and 3000 units respectively.

Contribution	Rs.
Y = 6000 × 13	78,000
Z = 3000 × 11	33,000
Total Contribution	1,11,000
Less: Fixed Cost	70,000
Profit	41,000

(2) If product Y is discontinued, production of X and Z will be increased by 50% each. Production of X and Z would be 9000 units and 3000 units respectively.

Contribution	Rs.
X = 9000 × 11	99,000
Z = 3000 × 11	33,000
Total Contribution	1,32,000
Less: Fixed Cost	70,000
Profit	62,000

(3) If product Z is discontinued, production of X and Y will be increased by 50% each. Production of X and Y would be 9000 units and 6000 units respectively.

Contribution	Rs.
X = 9000 × 11	99,000
Y = 6000 × 13	78,000
Total Contribution	1,77,000
Less: Fixed Cost	70,000
Profit	1,07,000

If product Z is discontinued then profit will be maximum i.e. Rs. 1, 07,000.

4.9 Responsibility Accounting

In an organization, the responsibilities of each and every level of management should clearly be communicated so that accountability should be ascertained. This technique of deciding responsibility on the basis of responsibility centres performance is known as responsibility accounting. The responsibility of each division, employee, department or manager is established and cost and revenue variances are calculated to control the operations.

According to Charles, T. Horngreen, "Responsibility Accounting is a system of accounting that recognizes various responsibility centres throughout the organisation and reflects the plans and actions of each of these centres by assigning particular revenues and costs to the one having the pertinent responsibility. It is also called profitability accounting and activity accounting".

According to E.L. Kohler, "Responsibility accounting is the classification, management, maintenance, review and appraisal of accounts serving the purpose of providing information on the quality, quantity and standards of performance attained by persons to whom authority has been assigned."

4.10 Nature/Characteristics of Responsibility Accounting

The key features of responsibility accounting can be explained as under:

- It is related to costs and revenue of an organization.
- In responsibility accounting, costs are divided into controllable and non controllable costs.
- The division of costs is done on the basis of cost centres.
- In responsibility accounting, comparison of actual and budgeted performance is done to determine the success or failure.

4.11 Kinds of Responsibility Centres

The most common types of responsibility centres are given as under:

Cost Centre: A cost or expense centre is a centre in which managers are accountable for the costs or expenses rather than revenues such as accounting department, HR department, research and development department, production and service department, etc. Here budget is prepared only to estimate or control the cost for a particular period.

Revenue Centre: A revenue centre is a centre in which managers are accountable for the revenue rather than costs such as sales department. Here the actual and budgeted sales are compared to increase the share of revenue by focusing on each segment of market.

Profits Centre: The centre in which manager is accountable for both cost as well as revenue is known as profit centre. The main objective of this centre is to acquire profits for which manager fixes the selling price, focuses on effective marketing programme and performs other activities to boost the profits.

Investment Centre: Here the manager is accountable for capital expenditure decision as well as cost and revenues. The manager decides to investment in an alternative manner after analyzing the different options on the basis of risk and return.

4.12 Process of Responsibility Accounting

Responsibility Accounting is a mechanism to achieve the organisational goals by dividing responsibilities. The steps involved in this process are as follow:

Determining the Responsibility Centre: First, creation of responsibility centres is done for whole organization and responsibilities of each manager of responsibility centres are decided.

Determining the Goals: The targets or goals of each responsibility centre are fixed with the help of the experts on the basis of facts and figures so that activities can be performed in the direction of achieving the goals.

Recording the actual performance: Actual work of every responsibility centre is noted down and is to be reported to the managers of each centre.

Finding out the deviations: The next step is to find out the variations by comparing the actual figures by budgeted ones and tried to find out the reasons of that particular gap.

Corrective measures: If variation exists, then necessary corrective measures are taken to combat these variations.

4.13 A Format of Performance Evaluation on the basis of Responsibility Accounting

Evaluation of Performance of the X Department for the Period…….

	Actual Costs Rs.	Budgeted Costs Rs.	Variances Rs.
Controllable Costs Material Direct Labour Maintenance Expenses Other variable expenses			
Total Controllable Costs (A)			
Uncontrollable and Allocated Costs Rent of Factory Depreciation Other Uncontrollable Costs			
Total Uncontrollable and Allocated Costs (B)			
Total Costs (A+B)			

4.14 Significance of Responsibility Accounting

Accountability: It decides the responsibilities of each level of management and the managers are responsible for their particular area or activity. If performance is unsatisfactory, the particular manager is held accountable for the failure.

Improves performance: Every manager performs his activity with special care because in case of failure he has to answer the reasons of gaps.

Cost control: It also helps in controlling the cost by dividing the work in to different responsibility centres.

Effective delegation: Delegation of authority and responsibilities becomes easier because of creation of different responsibility centres.

Quick decisions: When every manager know his/her limits and activities, it becomes easier to take a decision.

Management by exception: Management by exception principle is also followed because work is divided in effective manner and only key activities are handed over to top management.

4.15 Disadvantages of Responsibility Accounting

Difficulty in cost categorization: It becomes more complex to categorize the controllable and uncontrollable costs.

Delay in decision making: Due to various responsibility centres and their numerous managers, it is not easy to take prompt decisions.

Conflicts: Every manager wants to show his performance more than other centres which creates conflicts among various centres.

Example 4.8: The data related to production department of CNT Company for the September 2019 is as follows :

	Budget Estimate	Actual
Production in units	2,000	3,000
	Amount (₹)	Amount (₹)
Material	80,000	1,00,000
Direct Labour	90,000	1,20,000
Maintenance Expenses	90,000	1,10,000
Manager Salary - Fixed Expenses	40,000	50,000
Rent of Factory	15,000	15,000
Administrative Expenses - Fixed		

	1,00,000	1,20,000
Depreciation	40,000	40,000
Power	60,000	80,000
Indirect Labour	40,000	50,000

Evaluate the performance on the basis of responsibility accounting.

Solution:

Report on Performance Evaluation for the month of September, 2019

	Budget Estimate	Budget Estimate for Actual Production	Actual	Variance
Units Produce	2000	3000	3000	
	Amount (₹)	Amount (₹)	Amount (₹)	
Controllable Costs				
Material	80,000	1,20,000	1,00,000	20,000 (F)
Direct Labour	90,000	1,35,000	1,20,000	15,000 (F)
Maintenance Expenses	70,000	1,05,000	1,10,000	5000 (A)
Manager Salary	40,000	60,000	60,000	--
Power	60,000	90,000	80,000	10,000 (F)
Indirect Labour	40,000	60,000	50,000	10,000 (F)
	3,80,000	5,70,000	5,20,000	50,000 (F)
Uncontrollable Costs				
Rent of Factory	15,000	15,000	15,000	--
Depreciation	40,000	40,000	40,000	--
Administrative Expenses	1,00,000	1,50,000	1,20,000	30,000 (F)
	1,55,000	2,05,000	1,75,000	30,000 (F)

Working Note:

1. The Budgeted Estimate for Actual Production can be calculated as follow:

Budgeted Estimate for Actual Production = $\frac{\text{Budgeted Cost}}{\text{Budgeted Units}}$ X Actual Units

For example, Material = $\frac{80,000}{2,000}$ X 3,000 = Rs.1, 20,000

4.16 Reporting to Management

Introduction

Reports are the necessary mechanism for management to make plan, policies and decisions as reports communicate the sufficient information to management and other related parties. Reports include various schedules, charts, graphs, financial data and presentation of various suitable statistical tools and techniques. Reports are the tool to maintain public relations as reports are prepared on the basis facts and figures. On the basis of reports a company can present its achievements, financial position, potential targets and programs and periodic information to related users including government, other officials and stakeholders.

According to S. N. Maheshwari, "Reporting to Management can be defined as an organized method of providing each manager with all the data and only those data which he needs for his decisions, when he needs them and in a form which aids his understanding and stimulates his action".

According to R.L. Smith," Reports are the instruments of communication, the nervous system of organisational anatomy."

4.17 Features and characteristics of Reporting to Management

The basic features of reporting may be explained as under:

- It is an iterative and continuous process.
- It provides necessary information to users.
- In includes presentation of results and necessary information of the company.
- It is the base of planning and decision making of the management.
- It is based on facts and reliable figures.
- It is prepared on periodic basis.

4.18 Significance/Functions of Reporting to Management

Reporting is an important tool of management for decision making and various other activities. The benefits for adopting reporting to management are as follows:

Communication: A report is a tool for the communication of the information to management for performing various functions such as planning, strategy and policy formulation, decision making, etc. A

report communicates the information to different stakeholders and officials and interested users for different purposes as investment decision, dividend declaration. It helps the government for preparing budget and other activities.

Reference: Reports can be used for future reference as they are based on the relevant facts and figures.

Legal obligations: One of the basic purposes to prepare reports is to fulfil the legal obligations. According to the Companies Act 2013, it is mandatory for a company to publish the audited reports and submit to the income tax authorities as per Income Tax Act 1961. Therefore, it is mandatory to prepare a report.

Public Relations: Reports are the main source to maintain public relations being a better source to inform public about various aspects of company and it also helps in increasing the reputation of the company.

Performance Measurement: Reports are the basis of performance measurement of financial position as well as employees of the corporation. On the basis of reports comparison of performance is made possible and corrective action may be taken to improve the gaps.

Fixation of the benchmark: Reports also provide help in setting up the standards or benchmarks for the operational and financial performance of a corporation.

Helpful for management: Reports are the main source of internal communication. On the basis of report's results it is easier to plan, control, and to coordinate among employees or departments and other managerial works.

Helpful in Decision making: It is easier for management to access related data for any subject matter of the company and can decide about area to be improved or can be brought to the optimal level.

Helpful in motivation: On the basis of reports, performance of each and every individual can be ascertained and reward or punishment can be decided accordingly. The financial position is also determined which motivates management to focus on more deprived areas.

Enhancing business growth: It also helps management to take quick decisions which increase the productivity and help to earn consistent profits. It helps in enhancing overall business growth and reputation of the business.

4.19 Factors to be considered for good reporting

An effective reporting system has some specific qualities which are as under:

Complete and reliable: The report should cover all the necessary aspects and should be based on reliable and unbiased facts.

Proper format: Report should be made according to the needs of the users. The information should be supplied in a proper manner using charts, graphs and other statistical techniques.

In time: Report should be submitted to management in time so that, further planning can be done or necessary action be initiated to improve the performance.

Precise: Reports should be based on relevant and sufficient information. Unnecessary facts should be avoided to present the reports.

Flexibility: Flexibility should be maintained to grab any changes according to dynamic circumstances easily. This is an important aspect of reporting. Reports should be flexible enough to change any significant information.

According to goals: Report should be based on the objectives of the company. Various information should be categorised for the evaluation purpose.

Low cost: Report is prepared to minimise the cost and to increase the profits. The resources used in preparing the report should also be minimised.

Ambiguity: Ambiguous words should be avoided while preparing reports so that, one can easily understand the meaning of the reports.

Effective presentation: The presentation of the report should be effective and according to the need of the targeted group so that the information could be conveyed in effective manner.

Logical: The content and sequence of the report should be logical. All data should be divided into different sections.

Continuity: Difference sections of report should be arranged in precise manner.

Abstract: Abstract should include all important aspect related to result. The essence of the report should be clear after reading the abstract.

Language: The report should be prepared in that language which is easily understandable by users. Short sentences should be used.

Length of the report: The report should not be so long. Tables and charts should be used to comprehend the report.

4.20 Types/forms of reports

Reports are classified according to following different basis:

1. On the basis of the purpose: Reports can of two types on the basis of need of users.

(a) Internal Reports: These reports are not public documents and prepared for the internal parties such as management, employees, etc. There reports are the basis of decision making and other managerial activities. These can be of three types:

- Reporting for top level management
- Reporting for middle level management
- Reporting for lower level management

(b) External Reports: These reports meet the needs of external users such as stakeholders, creditors, government, customers and stock exchanges, etc. These are the published documents and are prepared according to legal requirements.

2. On the basis of the submission: They are classified into routine or specific reports on the basis of submission:

(a) Routine Reports: The routine reports are prepared to perform planning and control activities by the management. These reports are based on the daily routine activities of management and are prepared for short period.

(b) Specific Reports: Specific reports are related to specific programme or decision making. These reports are for specific matters as labour conflict, capital expenditure and cost control etc.

3. On the basis of the functions: These reports may be operating or financial.

(a) Operating reports: These reports are based on the operating activities of a business. These reports may be of two types:

(i) Control Reports: These reports are prepared to control the activities of business. These reports are useful for comparing the budgeted operational activities to actual performance.

(ii) Information Reports: These reports help in planning and making policies for the business. The scope of these reports is much wider than control reports.

(b) Financial Reports: These reports portrait the financial position of the concern. The examples of financial reports are cash flow statement, balance sheet and other financial statements, etc. They can further be explained as under:

(i) Static Reports: The reports which define the information at a particular date such as balance sheet is called static report. These reports describe the financial wealth of a corporation.

(ii) Dynamic reports: These are the reports which state the financial position, their comparison and changes in financial position, etc. of a corporation. For example, cash flow statement, funds flow statement etc.

4. On the basis of the preparation:

(a) Trend Reports: These are the reports in which comparison of more than one period is made to know the trends of a particular period. The trends can be calculated activity wise or department wise or business as a whole.

(b) Analytical Reports: In these reports, comparison is made of diverse activities for a specific period or budgeted and actual facts can be compared. These reports are the base to draw conclusions.

5. On the basis of activities

(i) Reports on individual activities: The report which directs only one executive is known as individual activity report. For example, report for a sales executive of a particular area.

(ii) Report based on joint activities: The report which provides information of more than one executive at a time is known as joint activities report.

The report may be of several types such as oral reports, written reports, graphical reports, descriptive reports and comparative reports, etc.

4.21 Format of an Effective Report

The presentation of a report in effective manner is a pre requisite. The following steps should be adopted while presenting the report:

1. Preliminaries

(a) Title Page: Title page includes the title of the report, and the name of the writers.

(b) Preface: It involves the acknowledgement, purpose of the report, background, scope, etc.

(c) Table of Content: It includes the division of the chapters, page numbers.

(d) List of Tables and Figures: This involves the list of tables and figures used in the report.

(e) Abstract: It contains the major problem and findings. It also includes the objectives of the report.

2. Main body of report: It involves the following:

(a) Introduction: Here is given the brief introduction of the subject matter for which the report relates to. It contains the history, present situation of the subject and all necessary details.

(b) Main body of text: It includes the purpose of report, methodology of report, analysis of data, methods used to analyse the data and presentation of information etc.

(c) Conclusion: This section involves the key findings and interpretation of the findings on the basis of which decisions will be taken.

3. The Reference Material

(a) Bibliography and References: It involves the sources from which information is collected and used or gained insight to prepare the report.

(b) Appendices: It includes the supporting material used to collect and prepare the report such as questionnaire, list of abbreviations, tables, figures and other related documents.

QUESTIONS FOR PRACTICE

1. 1.Discuss the following cost concepts associated with decision making :

   (a) Relevant costs (b) Differential cost.

2. What factor would you take in to consideration in closing or suspending the activity?
3. "The three factors of price, cost and volume are fundamental to virtually every business activity, every business decision." Discuss the statement, explaining the inter-relation of the factor named.
4. Explain the cost and non-cost considerations which shall govern the decision to make or buy a component.
5. Cost-benefit analysis is needed for resolving many managerial problems. List the various items of cost and benefit that you will quantity in respect of managerial decisions concerning: (a)Change versus Status quo,(b) retain or Replace ,(c) Shut-down and continue .
6. Prepare a detailed note explaining and illustrating the circumstances in which the following cost concepts can be applied in decision making:

   (a) Opportunity cost (b) incremental cost.

7. Explain in unambiguous terms with illustrative examples the following concepts :

   (1)Relevant cost, (2) Opportunity cost, (3) Sunk Cost.

8. A manufacturer who has been in the line of manufacturing and selling shoes has been utilizing 70% of his capacity. He has costed the shoes as follow:

	Rs.
Raw material	10
wages	5
overhead expenses	6
Depreciation	3
Selling price	25

   Present production is 5000 pairs of shoes per month and on 70% capacity it will be 6000 pairs per month. An offer for export of 2000 pairs per month is available for 6 month at the sale price of Rs. 22 per pair net of all export related expenses and incentives. Should the order accepted or not?

9. Present the following information to show the management: (a) marginal cost and contribution per unit. (b) Total contribution and profit from each mixture

	Product	Price per unit
Direct material	A	10
	B	9
Direct wages	A	3
	B	2

Fixed expenses	Rs. 800	
Sale price	A	20
	B	15

Variable expenses are allocated to product as 100% of direct wages

Sales mixture:

(i) 1000 units of Product A and 2000 units of Product B

(ii) 1500 units of Product A and 1500 units of Product B

(i) 2000 units of Product A and 1000 units of Product B

Recommend which of the sales mixture should be accepted.

(Ans. Profit (i) Rs. 7200; (ii) Rs. 8200; (iii) Rs. 9200; mixture iii is recommended.)

10. Explain the concept of responsibility accounting.
11. What is a responsibility centre? Explain different types of responsibility centers.
12. What do you understand by responsibility accounting?
13. What do you understand by the term "reporting to management"? What are the general principles to be observed while preparing reports?
14. What consideration would guide you in deciding the method of presenting information?
15. "A proper reporting system in essential for efficient management "Explain.

Suggested Readings:-

1. J.K. Aggarwal, R.K. Aggarwal, M.L. Sharma – Accounting for Managerial Decisions– Ramesh Book Depot, Jaipur.
2. R. Kishore–Advance Management Accounting–Taxman allied Services Pvt. Ltd.
3. M.Y. Khan, P.K. Jain–Management Accounting–Tata McGraw Hill
4. Horngren, Sundem, Stratton–Introduction to Management Accounting-Pearson Education
5. S.N. Mittal–Accounting & Financial Management – Shree Mahavir Book Depot, Nai Sarak, New Delhi.
6. Anthony, Robat N., Hawkins and Merchant Management Ac