Management Accounting

DEACC301

Edited by
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LOVELY PROFESSIONAL UNIVERSITY

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Content

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Unit 01: Introduction to Management Accounting

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Objectives

In this unit, student will be able to:

- understand the meaning and the nature of management accounting
- comprehend the scope and the objectives of management accounting
- analyze the limitations of management accounting

Introduction

Management is one of the important stakeholders of a business. In the present era, when we see the businesses in special form of limited liability concepts; in which the Corporates and Limited Liability Partnerships (LLPs) are the major players. The definition of company has got in it special feature of separate legal entity entailing a gap between the ownership and management. It is therefore, here is the need that the management, as one of the important stakeholders should be discharging its fiduciary role in a very correct way. It is clear that all levels of management especially the top level of management, Board of Directors, are dependent on an information support system- for the requisiteinformation, to take respective decisions, which are very strategic and also non-routine. To help out, here is the need of management accountant. Management accountant is the person, who is well versed with the tools and techniques of an important discipline called "management accounting". It is important to note that the management accountant and management accounting has got features that the former is a professional and later is a profession. Specifically, the purpose of management accounting is to provide the concerned managers, the requisite information, which is essentially tailored, to cater to the need of particular manager to take right decision.

1.1 Meaning of Management Accounting

Management Accounting is accounting for management. Understandably,management is one of the stakeholders of a business.It is therefore; very pertinent that the needs of the Management in terms of inputs needed to take decisions is met by a decision support system. To understand the meaning of management accounting there are many definitions given by the various experts.In his Book, Management Accountancy, Batty, J. defines Management Accounting as:

"Management Accountancy is the term used to describe the accounting methods, systems and techniques which, coupled with special knowledge and ability, assist management in its task of maximising profits or minimising losses".

The ICMA London has defined management accounting as:

"The presentation of accounting information in such a way so as to assist management in the creation of policy and in day to day operations of an undertaking"

Management Accounting is concerned with the provision of information for managers to manage-Ian Tricker. R.

Chartered Institute of Management Accountants (CIMA) defines management accounting as

"The process of identification, measurement, accumulation, analysis, preparation, interpretation and communication of information, used by management to plan, evaluate and control within an entity and to assure appropriate use of accountability, for its resources. Management Accounting also comprises the preparation of financial reports for non-management groups such as shareholders, creditors, regulatory agencies and tax authorities."

Management or Managerial accounting is the practice of identifying, measuring, analyzing, interpreting, and communicating financial information to managers for the pursuit of an organization's goals. It varies from financial accounting because the intended purpose of managerial accounting is to assist users internal to the company in making well-informed business decisions.

Management accounting also is known as managerial accounting and can be defined as a process of providing financial information and resources to the managers in decision making.

Management accounting is only used by the internal team of the organization, and this is the only thing which differentiates it from financial accounting.

Objective of management accounting is to use the existing statistical data available for well informed decisions to be taken by the concerned, controlling the enterprise.

Managerial accounting encompasses many facets of accounting aimed at improving the quality of information delivered to management as far as business operation metrics are concerned.

Managerial accountants use information related to the internal operations. The data may be from departments like; costing, sales, marketing,stores,production,finance, human resources,research and development etc**.**It is therefore necessary that the various departments of the organization like; Finance, Sales, Costing, HR, Production etc., do co-operate with management accountant by data sharing and exchange.

Literally,management accounting is concerned with the prime activity of presenting the financial data of business activities, for the internal management of the organization.

As far a financial accounting and cost accounting is concerned, financial accounting is the recording and presentation of information for the benefit of the various stakeholders of an organization may be insiders or outsiders. Whereas cost accounting specifically focuses on capturing a company's total costs of production by assessing the variable costs of each step of production, as well as fixed costs. It allows businesses to identify and reduce unnecessary spending and maximize profits.

Caution:

- Managerial accounting is for internal purposes and is not for external users.
- For Internal purposes it can be customized and modified to meet the needs of different sections and departments or divisions etc.

Example: Managers in the production department may want to see their financial information displayed as a percentage of units produced in the period and, the HR department manager may be interested in seeing a graph of salaries by employee over a period of time. Managerial accounting is able to meet the needs of both departments by offering information in whatever format is most beneficial to that specific need.

1.2 Nature of Management Accounting

- ***Provides Information***
- ***Cause and Effect Analysis***
- ***Special Techniques and Concepts***
- ***Decision Making***
- ***Objectives***
- ***No Fixed Rules***

Provides Information

At all levels of management there is need of specific and authentic inputs to take appropriate decision. The management accountant provides all the input in terms of required information to help the respective managers to take appropriate decision.

Cause and Effect Analysis:

For extracting the information, management accountant digs deep for acause and effect analysis.

For example, the variable of profit may be compared with the current assets, sales, and share capital. The found relativity can be of a great help to management team to infer for drawing conclusions.

Special Techniques and Concepts

Management Accounting is definitely a science as well as an art. It uses various techniques and tools to interpret data for informational needs.

These techniques include standard costing, marginal costing, financial planning and analyses, budgetary control, cash flow, and so on.

Decision Making

It is very evident that management accounting is concerned with decision making.

To help in taking the decisions amid complex business situations; historical (past) data is analysed and interpreted by the concerned.

Objectives

Management accounting has definite objectives to be accomplished.

Example:The objective may be to find the reasons for the continuous decline in the profitability of the business

No Fixed Rules:

Unlike financial accounting management accounting has got no fixed rules and conventions.

Caution: The role of management accountant is dynamic in nature.

1.3 Scope of Management Accounting

- Enhance Efficiency
- Provides Data Not Decisions

- Financial Accounting
- Forecasting and Budgeting
- Cost Accounting
- Reporting
- Internal Audit
- Financial Management

Enhance Efficiency:

The purpose of management accounting is to increase the efficiency of the business. It focuses on finding the loopholes and lacunae and suggesting the most effective way to overcome such weaknesses.

Provides Data Not Decisions:

Management Accounting provides decisional supports. It is an aid for decisions. Required data is provided by the management accountant to help managerial levels in taking right decision(s).

Financial Accounting:

Yes, management accounting has a lot to do with financial accounting. It uses for inputs the data of financial accounting like; Profit and Loss Account, Balance Sheet, Cash Flow Statement, Fund Flow Statement for the right output/end result.

Forecasting and Budgeting:

For devising right plans and strategies; all levels of management needs services of management accountant.Management accounting may be using historical data to make effective budgets to serve as a control for better future results.

Cost Accounting:

Cost accounting data is also one of the sources for management accountant.

Example:In capital budgeting decisions like:Adding a new line of business or Divesting from an existing line of business, the top management may be taking the help of management accountant. For this theCost Sheet data can be of great help to the respective management accountant.

Reporting:

Essentially, management accounting is concerned with formulating well drafted reports to be used by the decision makers at various managerial levels.

Internal Audit:

In Internal Audit examines and re-examines the transactions held in the past. Through such exercises inefficiencies and drawbacks are identified for corrective actions to be taken.

Financial Management:

The overall objective of the business is wealth maximization. Financial management is an essential part of management accounting because through this discipline the dynamics of money are well understood. In simple words, financial management helps the management accountant.

1.4 Objectives of Management Accounting

- Information Providing
- Helping in Planning and policy formulation
- Decision making supports
- Motivating the whole organisation
- Controlling
- Coordination of operations
- Reporting
- Effective organisation

Information Providing:

Management Accounting is concerned with providing information to the concerned for taking effective decisions.

Example:Variable of Capital Employed from Balance Sheet and Net Profit from Profit and Loss A/c can be selected to help top management in understanding what the return on capital employed.

Helping in Planning and Policy Formulation:

Management Accounting helps managers all the concerned managers in planning and policy formulation.

Example:Cost Budget made can be used for cost estimation and control.

Decision Making Support:

Management Accountant helps other managers in taking right decisions. It is done, when the management accountant provides the desired information sought by the respective manager.

Motivating the Whole Organisation:

Honest evaluations done by the management accountant can be a big source of motivation for all of thedeserving and capable resources within the organisation.

Controlling:

The analytical and interpretative methods adopted by management accountant helps in controlling the activities and affairs of a business.

Coordination of Operations:

Management Accounting is broad based and holistic in nature. It takes account of the things individually; to provide information to the top levels for taking decisions; which may be concerning the organisation as a whole.

Reporting:

The overall objective of management accounting is to report to the management the very things crucially challenging a business!

Effective Organisation:

The profile of a management accountant is to help organisation in filling the informational gap. By providing the relevant and effective information, the management accountant definitely helps the served organisation.It should be the dream of every management accountant to make the organisation; he or she serves; the best one.

1.5 Limitations of Management Accounting

- Only a tool but not a substitute
- Evolutionary Stage
- Limitation-Based on records
- Lack of knowledge
- Persistent efforts
- Intensive decisions
- Costly Installation
- Personal Bias
- Resistance
- Top Heavy Structure
- Provides Data Only
- Broad Based in Scope
- Resistance and Opposition to Change

Only a tool but not a substitute:

Management Accounting is only a management support function. In no case it can replace the management.

Evolutionary Stage:

Management Accounting is still in its evolutionary stage and definitely there are teething problems of it.

Based on records:

Management Accounting is dependent on and fetches knowledge from existing data bases like;Production, Costing, Sales,and Human Resources etc.

Lack of knowledge:

Truly, management accountancy is interdisciplinary in nature and there is need of great knowledge and expertise.

Persistent efforts:

Since management accounting is based on existing data base; any deviations tracked may be requiring continuous efforts of management accountant.

Intensive decisions:

Systematic approach required in management accounting sometimes may not be appreciated and top hierarchy may prefer following short cut like; preferring to take decisions "based on own intuitions rather than accepting advice of management accountant."

Costly Installation:

There is needed huge investment in the installation of management accounting system in the organisation.

Personal Bias:

The person bias of the management accountant itself may be one of the reasons for added impurity.

Resistance:

Win-win situations are not very often. Resistance and animosity in the organisation can be created by the persons; who got targeted; by the top management due to the reason that; there was negative report of management accountant against them.

Top Heavy Structure:

The installation of a management accounting system requires high costs on account of an elaborate organization and numerous rules and regulations. It can, therefore, be adopted only by big concerns.

Provides Data Only:

Management accounting provides data and not decisions. It can only inform, not prescribe.

Broad Based in Scope:

Degree of inexactness and subjectivity creeps in due to the fact that management accounting is broad based.

Resistance and Opposition to Change

Management accounting demands a break away from traditional accounting practices.

It calls for a rearrangement which is generally not liked by the people involved.

Summary

- Management accounting is both a science as well as an art.
- Management accounting and management accountant has got features that former is a discipline and later is a professional who read management accounting as a discipline.
- Management accounting is very dynamic in nature and deals with the informational needs of all levels of management: viz, Top, Middle& Lower.
- Management Accounting is all pervasive and takes input form many disciplines like, Financial Accounting, Cost Accounting, and Financial Management etc.

Keywords

- **Information providing**: Catering to the needs of all levels of manager.
- **Holistic in nature**: Management accounting is all pervasive and 360 degree in approach.
- **Dynamic**: Ever changing and updating to cater to the imminent needs or challenges.

Self Assessment

1. Management accounting is-------as well as-------.

A. Science

B. Art

C. Both A & B

D. History

2. Management accounting is -------of management.

A. Substitute

B. Support

C. Exchange

D. All of the above

3. Management accounting and management accountant are:

A. Same

B. One is discipline and other is profession.

C. Not related

D. All of the above

4. The scope of management accounting includes

A. Costing

B. Financial Accounting

C. Financial Management

D. All of the above

5. The objective(s) of management accounting is/are:

A. Organisational Efficiency

B. Organisational Effectiveness

C. Personal bias and reporting

D. Both A & B

6. The Limitation(s) of management accounting is/are:

A. Organisational Efficiency

B. Organisational Effectiveness

C. Personal bias and reporting

D. Both A & B

7. The Limitation(s) of management accounting is/are:

A. A new profession

B. Human Bias

C. Resistance

D. All of the above

8. Which of the followings come in the definition of management accounting:

A. It is concerned with information needs of management

B. Derives knowledge from various disciplines

C. Is based on the data base of different departments of an organisation

D. All of the above

9. Poor performance of Manager A is reported to the top authorities by the corporate management accountant. Nowmanager A is not ready to accept his fault and start resisting the corporate management accountant. It is an instance of:

A. A limitation of management accounting.

B. Organisational Effectiveness

C. Personal bias and reporting

D. Both A & B

10. The services of management accountant are useful to:

A. Lower management

B. Middle management

C. Top management

D. All of the above

11. Which of the following statement(s) is/are incorrect

A. Management accounting is support to all levels of management

B. Organisational Effectiveness is assured by management accounting

C. Personal bias and reporting is part of duties of management accountant.

D. Both A and B

12. The role and profile of management accountant requires:

A. Experience

B. Formal education

C. Both A & B

D. None of the above

13. Management accounting is

A. Past oriented

B.Future oriented

C. Communication oriented

D. None of the above

14. Management accounting deals with:

A. Qualitative information

B.Quantative information

C. Both A & B

D. None of the above

15. The following are the tools of management accounting?

1.Standard Costing

2.Decision Accounting

3.Budgetary Control

4.Human Resource Accounting

A.1, 2, 3

B.1, 2, 4

C.2, 3, 4

D.1, 3, 4

Answer for Self Assessment

1.	C	2.	B	3.	B	4.	D	5.	D
6.	C	7.	D	8.	D	9.	A	10.	D
11.	C	12.	C	13.	B	14.	C	15.	A

Review Questions

1. Compare and contrast management accounting and management accountant?
2. What are the objectives of management accounting?
3. Discuss any five limitations of management accounting?
4. "Management accountant caters to the need of all levels of managers"? Discuss in the light of the statement the scope of management accounting?
5. Role of management accountant is highly dynamic and challenging? Discuss.

Further Readings

- Arora M. N., Cost and Management Accounting, Himalaya Publishing House, 2010.
- Pandey, I.M., Management Accounting, Excel Book, New Delhi, 2007.
- Shah Paresh, Management Accounting, Oxford University Press, New Delhi, 2009.

Web Links

- https://icmai.in/upload/Students/Syllabus2016/Inter/Paper-10New.pdf
- www.managementstudyguide.com

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Unit 02:Management Discussion and Analysis Report

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Objectives

In this unit, student will be able to:

- understand the meaning and relevance of management discussion and analysis (MD&A).
- interpret the relevance of Directors' Report, Auditors' Report and Corporate Governance Report.
- comprehend the concept of International Financial Reporting Standards(IFRS).

Introduction

Every company has to report its annual results in a manner prescribed by the regulator of the governing country. In India; the Institute of Chartered Accountants of India (ICAI) established under the Ministry of Corporate Affairs (MCA), is the governing body in context. By virtue of membership; the fellow members of the Institute are supposed to assure that the company under their audit is adhering to the rules and regulations. There has to be assured by strict compliance in the conduct of the affairs of the company. In very simple words, every company has to follow the rules of the governing Country to fulfill the aspiration of the law; not only in letter but also in spirits.

In India the companies Act 2013 (erstwhile the Companies Act.1956) has got detailed provisions for governing a company. There has to be an annual general meeting (AGM) for every public limited company; to be held for each year. In this meeting, there is placed before the formally invited members (shareholders registered in the register of members of the company) the statement of affairs of the company. The statement of affairs of the company means that for the period under consideration there is placed:

1. Profit and Loss Account stating the profit or loss earned by the business during the financial year say, for the period starting from April01, XXX1 till March31, XXX2.
2. The Balance Sheet stating the financial position of the business as on particular date say, March 31, XXX2.

3. The Cash Flow Statement stating the changes brought in the cash and bank account from the beginning till the end, say, how the opening balance of April 01, XXX1 has changed to the balance as on March 31, XXX2.
4. The Fund Flow Statement showing how the balance sheet of one year, say XXX1 has changed to the next year XXX2.
5. Notes to accounts form important part of an annual report. Such notes systematically tell in detail the changes in the accounts brought in the year in consideration.

Example:Let us assume that the opening balance of Land Account as on April 01, XXX1 is Rupees 12, 00,000 and Closing Balance of this account as on March 31, XXX2 is Rupees 16, 00,000.

The detail of this account can be given in say, Notes 12

Now the Note 12 will give the details like:

Opening Balance as on April 01, XXX1 =Rs.12, 00,000
Plus Purchase of land during the year=Rs. 4, 00,000
Closing Balance as onMarch 31, XXX2 =Rs. 16, 00,000.

Caution:

The annual report has to have detailed sections in it like:

1. Management Discussion and Analysis (MD&A)
2. Directors' Report
3. Auditors' Report
4. Notes to the Accounts

2.1 Management Discussion and Analysis Report

In Annual Report of a company there is one important section called "Management Discussion and Analysis (MD&A).MD&A demonstrates the commitment of Corporate to the Company's vision and strategy, and how the management, in the current year, has created value and delivered performance in light of their long term goals.When the term management is referred throughout this concept, it will be involving complete structure of organization.

Information about Board of Directors, Chief Executive Officer and other Chiefs, their reporting officers/ controllers of various departments– Human Resources (People), Finance, Marketing, Production and Operations, etc. and the remaining middle and lower management levels.MD&A does not only scrutinize financial figures/ results, but also looks into Human resources and operations side of the business, which the fundamental and key factors to any business organization.

MD&A enables readers of the financial statements to understand in better way the numbers, financial condition and to get into management's shoes to understand certain strategic and operational decisions which are bold and largely impacting the future performance and position of the Company.Additional supplementary/ complimentary information provided in MD&A will help readers understand what exactly the financial statements depict and what is not reflected.

Addressing the investors' perception towards the risks associated with the business operations and outlining past trends to indicate the management's efforts towards mitigating those risks and leading the path towards future financial statements is catered to by MD&A Section.There might be certain information, which though not mandated to be disclosed in the financial statements, its additional reference and disclosure by the management can be of added value for the informed decision making by the stakeholders, which include Government authorities.Qualitative information mentioned in the Management Analysis section comments on the state of the economy and the industry performance *vis-a vis* the business of the company.

MD&A Section help Government authorities, let it be taxation authorities, capital market watchdogs, fiscal policy makers, banking regulators so on, try to formulate the operational, fiscal and monetary policies.MD&A Section definitely helps the first time investors in taking well informed decisions.Accounting professional governing institutions acting in the respective countries might provide guidance for the presentation of MD&A.

Example, Federal Accounting Standards Advisory Board (FASAB) in the United States has issued a recommended accounting standard on the Management Discussion and Analysis with first draft published in January 1997.

Caution:

In India, there is no standard or guidance note in this behalf, however, the Institute of Company Secretaries of India (ICSI) has issued Reference Note on Board's Report under their Companies Act 2013 series, but leaving MD&A presentation to the interpretation of the industry.

Published in November 2002;the Canadian Performance Reporting Board has laid down certain principles based on which MD&A should be prepared like:

1. Through the Eyes of Management –

A company should disclose information in the MD&A that enables readers to view it through the eyes of management.

2. Integration with Financial Statements –

MD&A should complement, as well as supplement, the financial statements.

3. Completeness and Materiality –

MD&A should be balanced, complete and fair as well as provide information that is material to the decision-making needs of users.

4. Forward-Looking Orientation –

A forward- looking orientation is fundamental to useful MD&A reporting.

5. Strategic Perspective –

The MD&A should explain management's strategy for achieving short-term and long-term objectives.

6. Usefulness –

To be useful, MD&A should be understandable, relevant, comparable, verifiable and timely.

Caution:

Finally MD&A Section should detail the following vital few-

1. Core Business and existence instinct
2. Key Performance Drivers
3. Capability to deliver results
4. Results and Outlook
5. Risk

2.2 Directors' Report

Every company which is registered under the ***Companies Act, 2013***, is required to attach director's report with financial statement and required to submit before members of the company during annual general meeting of the company.As per the provisions of ***section 134 of the companies act, 2013*** every company after its registration, needs to make certain disclosures about the financial status of the company.It is obligation of every listed company to comply with certain provisions to make a disclosure to SEBI under ***Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015.***

- Literally, Director's report is a financial disclosure made by director to the shareholders of the company.
- It is envisaged to disclose financial status of the company by disclosing company's affairs and scope of work along with its subsidiaries.
- It is basically financial summary of the company for the whole financial year and future vision too.

In erstwhile companies act, 1956 provisions related to director report as defined under section 217, but in new companies act, 2013, these terms have been defined under many sections.

A director of the company needs to prepare and submit a said report to shareholders of the company at every annual general meeting every year in order to maintain transparency in the company.It helps stakeholders of the company understand the current financial status of the company and future scope.

Director's Report helps in understanding the:-

- The current financial health of the company.
- Company's capability to diversify and grow.
- Company's status and position in the current market and future scope and growth.
- Whether company is following current regulations, standards, and social responsibility as required by various regulators like ROC, RBI, SEBI, etc.
- Company's description and details of current shareholders and other key managerial personnel's.
- Directors description submitting director's report.
- Description of companies trading activity.
- Future vision and prospectus of the company.
- Submission and description of financial records and statement of the company before members.
- Current Balance sheet, profit and loss, and cash flow description along with auditor's report.
- Dividend recommendation for current financial year.
- Any financial incidence that may affect company's financial position in the future.

Is it mandatory to submit director's report?

A director of the company is liable to submit director report every financial year before shareholders of the company. Companies act, 2013 has made it mandatory to file this report as per many sections embedded in the act whereas, in the erstwhile act, only section 217 talked about director's report.

Who can sign director's report?

As per the provisions of section 134(6) of the companies act, 2013 chairperson of the company shall sign director/board's report and in case of his absence or as authorized by board of directors by at least 2 directors. One of 2 directors shall be Managing director of the company.

Companies act, 2013 has made it mandatory provision to submit Director Report during annual general meeting, and several related provisions have been embedded in the new companies act.

Conclusion

Companies act, 2013 has made it mandatory provision to submit Director Report during annual general meeting, and several related provisions have been embedded in the new companies act. In order to make sure that every company shall follow this, penal provisions have also been made in this regard.

As per section 134(8) of the companies' act, 2013, if any company fails to comply with the provisions as made under section 134 of the companies act, then fine amount of Rs. 50000- which may extend up to Rs. 25 lakh can be imposed on the company. Further, any officer in default can be imprisoned for a term which may extend to 3 years or a fine of Rupees 50,000 to Rupees 5 lakh or both.

2.3 Auditors' Report

An independent Auditor's Report is an official opinion issued by an external or internal auditor as to the quality and accuracy of the financial statements prepared by a company.The report is a primary source of communication between the auditor and users of financial statements.The users include equity shareholders, lenders, creditors, and any other potential investors in the company.

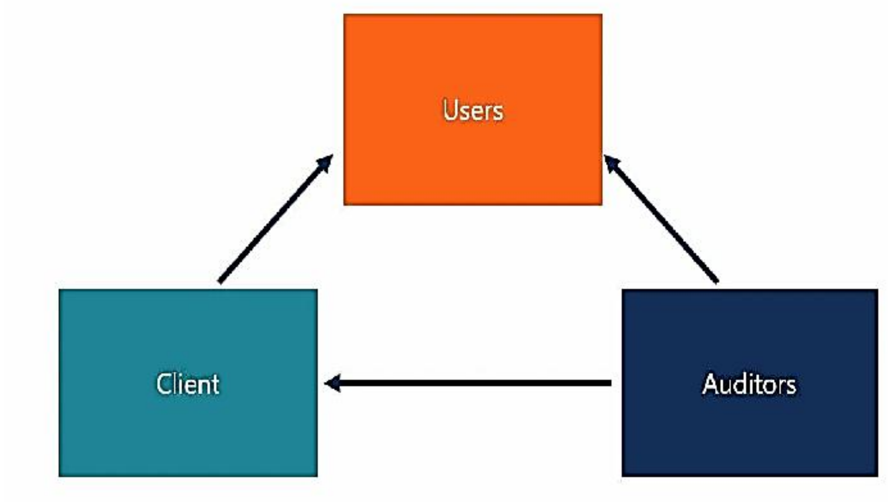

Figure 1: Users of Financial Statement

The auditor provides auditing services to the client, the client provides the financial statements to the users, and the auditor provides the auditor's report to the users.

Types of Auditor's Reports:

The types of auditor's reports are as follow:

Unqualified or clean opinion auditor's report:

The most standard form of the auditor's report, where everything is presented fairly in all material respects is called Unqualified or clean opinion auditor's report.

A qualified opinion auditor's report:

A **qualified opinion** is reported if there is a material error in the financial statements, or if the auditor is unable to gather enough information to verify a certain aspect of the reporting.

However, in a qualified opinion, the error is small enough that it does not hurt the overall accuracy of the financial statements.

An adverse opinion auditor's Report:

An **adverse opinion** is reported when there are material errors in the financial statements that negatively affect the accuracy of the financial statements.

A disclaimer of opinion Report:

A **disclaimer of opinion** is reported when the auditor cannot, or refuses to, state an opinion on the financial statements.

It can occur if the auditor has concerns about the company's ability to continue operating, or if the company has limited the scope of the audit such that the auditor is unable to form an opinion.

A disclaimer of opinion can also be reported if the auditor is not fully independent or if there are conflicts of interest.

True and fair view in Audit Reports

One section of the auditor's report states that "accompanying financial statements present fairly, in all material respects, the financial position of the company as of XXX."It is important to note that it says that the financial statements are presented "fairly" – it does not say that they are presented "accurately" or "precisely."It means that there are areas where professional judgment and policy choices were made and differences could exist between the judgments of different auditors.Auditors are primarily concerned with material misstatements, which include omissions or other errors that individually or in the aggregate would reasonably be expected to influence the economic decisions of users.

2.4 Corporate Governance Report

A corporate governance report is also called the annual corporate report.

It includes a statement of corporate governance procedures and compliance, information on board composition, statements on the company's performance, and information about compliance and conformance with best practices for good corporate governance.The Annual Corporate Governance Report contains full information about the company's corporate governance structure and practices, including an analysis of the degree of compliance with the recommendations of the Code of Good Governance.Good corporate governance is essential to create trust and engagement between companies and their investors, so contributing to the long-term success of the business.

What Are the Pillars of Corporate Governance?

Corporate governance can be divided into six broad categories, including;

- Accountability,
- Efficiency and effectiveness,
- Fairness,
- Responsibility,
- Transparency and
- Independence.

Understandably; corporation's leadership, including the board and the senior managers, are individually and collectively accountable for their actions and decisions.Leadership needs to continually monitor their activities and operations to ensure that they are efficient and effective, and that they support the corporation's mission.Corporate governance requires a corporation's leaders to be honest, faithful, diligent and fair at all times, and be ever mindful of the importance of displaying ethical and virtuous behavior.

Another pillar of good corporate governance requires leaders to be capable, responsible, and aware of their obligations and responsibilities.Openness and transparency are primary components of good corporate governance. Leadership must report information about the company accurately and in a timely manner.Finally, independence on the board is important to good corporate governance because it ensures that decision-making is objective and fair.

Statements of Disclosure of Governance Procedures and Compliance

The corporate report should include a statement of disclosure of the company's governance procedures and compliance. It should also disclose the principles and codes that guide the company's procedures.Disclosure statements usually detail the distribution of powers between the board chair and the CEO.

Board Composition

The ideal size of corporate boards is 7 to 11 members.

Best practices for good corporate governance recommend that boards strive for a mix of board directors in terms of competencies, age, gender, profession, independence and diversity. There should also be a mix of executive and independent directors, with the majority being independent directors. Disclosure statements should disclose the regularity and frequency of board meetings.The corporate governance report should contain a section that lists the powers, functions, roles and responsibilities of board directors.

Committees and Sub-Committees

The report includes information about committees and sub-committees and any delegated powers and duties.

This section of the report should include conformance and transformative functions.

Board of Directors

Shareholders may be particularly interested in reading information about board directors in the corporate governance report. Such information may include the company's procedures for appointing directors, board development, succession planning and remuneration by shareholding members.Disclosures often describe the corporation's mechanisms for monitoring the board's performance, as well as the performance of individual board directors. It also includes information about related party transactions, conflicts of interest and how the board handled them.

A section of the annual report details the overall organizational plan, and how it relates to business plans and budgets; operational and performance measures; and a description of risk management and internal control procedures. These reports provide evidence of accountability and transparency and support generally accepted accounting and auditing standards. Sections on accounting also specifically disclose the company's relationship with internal and external auditors.Disclosure statements also cover such issues as communications with shareholders and stakeholders, legal compliance, and codes of conduct for the board, CEO, management and staff.

Finally, statements usually detail the nature of the business and its future prospects. Shareholders are interested in knowing the company's outlook for growth, sustainability and innovation, and how the corporation plans to factor future market trends into their strategic planning.

2.5 Concept of IFRS

International Financial Reporting Standards (IFRS) are a set of accounting rules for the financial statements of public companies that are intended to make them consistent, transparent, and easily comparable around the world.IFRS or International Financial Reporting Standards refers to a globally-accepted set of accounting and financial reporting guidelines for preparing and presenting financial statements. It ensures uniformity in accounting practice that makes financial records comparable across different reporting entities worldwide. Over the years, it has emerged as the new world standard in accounting.

IFRS is a unique set of rules and regulations followed worldwide for recording financial transactions of a business entity. At present, it is adopted more than 144 jurisdictions.

In June 2003, first copy of IFRS was published by International Accounting Standard Board (IASB).

It is a board of finance and accounting experts with responsibility for designing and issuance of the standards.Before IFRS there were International Accounting Standards (IAS), which were in practice before. IFRS superseded IAS.

The purpose of financial statement is to provide information on a company’s financial performance and position to help current or prospective stakeholders make reliable financing decisions. It is a company’s primary means of communication with them.So, the information presented in the records should be relevant, reliable, accurate, and comparable. To ensure it, companies started observing regionally accepted accounting standards.

However, separate standardsfor different countries,due to a lack of uniformity in their accounting guidelines, make comparing different companies across countries more difficult.

As a result, companies had to prepare several sets of financial statements for different jurisdictions.

With the emergence of multinationals having a presence in multiple countries, the need for a global accounting framework gained momentum. It gave rise to the formation of IASB. The international Accounting Standard Board (IASB) is an independent group with hybrid experts in finances, auditing, accounting standards, and education. The task of board members is to issue and publish financial accounting standards.

The IASB was created with the sole purpose of designing an international financial reporting system that will ensure smooth processing, interpretation, and comprehension of financial statements of a business.IASB introduced IAS and later IFRS that laid down a framework of universally recognized accounting principles.

The IFRS establishes accounting standards and practices that every company adhering to it must observe. IFRS is a rule book that must be followed while recording business transactions in the books of accounts. Also, as it yields transparency and consistency in financial reporting.Governments use it to regulate direct and indirect foreign investments.It is accepted worldwide as it facilitates the free flow of capital.

In other words, any U.S. investor will be more confident to invest in, suppose, an Indian company after scrutinizing its financial records; if they are prepared in conformity with IFRS accounting standard.

Following the internationally-approved standards eliminate accounting risks associated with such investments.

However, it is to be noted that the U.S. government enforces **GAAP** on their companies. Therefore, there is often a widespread debate on IFRS vs. US-GAAP when it comes to compliance.IFRS is lengthy and flexible compared to GAAP.As it is principle-based, its rules are open to multiple interpretations. However, both IFRS and GAAP serve a common objective of uniformity and openness in maintaining financial statements.

Objectives of IFRS

1. Create a Common Law

One of its key objectives is to ensure that common law is introduced and adopted by as many jurisdictions and countries as possible to bring everyone on the same page. It ensures that everyone follows the same guidelines and adopts a universal way of reporting business activities.

2. Aid analysis

It helps stakeholders in analyzing a company's performance and interpreting its financial position. For example, corporations and governments use these standards to make credible financial statements. It aids in categorizing and reporting financial data with accuracy and consistency. Such financial records promote better comprehension and help decision-making.

3. Assist in preparation of reliable financial records

By following **International Financial Reporting Standards**, the data presented in the books of accounts are likely to be accurate, reliable, uniform, and appropriate within the bounds of its rules. The high quality of financial records assists investors in making informed economic decisions.

4. Ensure comparability, transparency, and flexibility in reporting

The consistency in reporting accounting practices enables easy comparison of the financial records of compliant companies across nations. Such comparisons allow investors to identify risks and opportunities before investing. As a result, it promotes foreign trade and investment.

Uses of IFRS

1. Financial Tool

The **International Financial Reporting Standards** bring efficiency, accuracy, and data transparency to serve public interests for growth, trust, and sustainability of the world economy. For example, the International Organization of Securities Commissions (IOSCO) is working with the IFRS to set up a new body to postulate mandatory Global Standards on climate change in company disclosures. The IOSCO will also eliminate any errors or conflicts by going interoperable with the global

2. Principles and Guide

The companies run their whole business and represent their financial data and information as per the IFRS accounting principles. If they fail to do so, they may be penalized for it. Hence, it assures the trustworthiness of a company.

3. Promotes Decision Making

The standards help investors make wise decisions regarding their investment by providing a clear picture of company reports and financial statements. It is possible because of its singular and universal language, making it easy to comprehend.

4. Improves Economy

Globally, investors are more open to investing in companies with IFRS-compliant financial records. Again, it is because such reports are presumed to be authentic, easily understandable, and comparable. This credibility opens the economy to foreign investment and thereby paves the way for economic progress.

Importance of IFRS

1. Transparency

It encourages transparency and accountability of financial statements prepared by companies, small firms, and government agencies. As a result, it minimizes the margin of error and manipulation of any holdings and irregularities of funds, transactions, and balances. Besides, it also motivates consistency and clarity of work.

2. Uniformity and Comprehensive

The **International Financial Reporting Standards** are developed to set uniformity in the presentation and understandability of statements. When everyone follows and recognizes the standards, it becomes easy for companies and agencies to follow a common law that helps world economies compare their growth comprehensively. Also, it is easy to read for everyone.

3. Security and Flow

It helps track the flow of transactions, records funds information, and works towards attaining a security level for direct and indirect foreign investments across nations.

4. Accountability

It strengthens accountability by bridging the gap of incompetent financial reporting. If not complied with it, the companies may face penalties. For example, the Johannesburg Stock Exchange fined a sugar firm TongaatHulett Ltd for not complying with IFRS.

Summary

- Every public limited company (called Limited company) has to have annual general meeting (AGM) for each financial year.
- Annual Report has to be made by every company which contains vital information as to the profitability of the business, financial status of the business, director' report, auditor's report and formal management discussion and analysis stating the present status of the company and future scope in line with the mission and vision established.
- There has to be report of corporate governance duly attested by the partner through an independent company secretarial audit.

- International financial reporting standards (IFRS) are a global attempt to harmonious financial statements worldwide by following consistent accounting standards and norms.

Keywords

MD&A: Management Discussion and Analysis

Annual Report: Annually reporting of the results to various stakeholders.

Director's Report: Part of annual report detailing the board endeavors.

Auditor's Report: View of inspectors on the authenticity of the financial statements.

Corporate Governance: Governing a company as a democratic good citizen.

IFRS: International Financial Reporting Standard.

Corporate Citizen: Respecting the separate legal entity of a company.

Self Assessment

1. The annual report has got the following in it

A. Statement of Director

B. Auditor's Report

C. Financial statements

D. All of the above

2. Corporate Governance is the governance of corporate to assure that:

A. There is care for every stakeholder

B. Legal norms are consistently followed

C. Impartial corporate board exists

D. All of the above

3. True and fair view means:

A. The financial statements are true reflection of corporate affairs

B. The interest of promoter group is specifically cared for

C. There was no hindrances to auditor in their audit work

D. Only A and C

4. For protecting the interest of minority stakeholders

A. There has to be adequate representations of the promoter group in board formation.

B. Adequacy of independent directors in board formation.

C. Strict compliance to market regulator.

D. Only B and C.

5. Management discussion and analysis is:

A. Mandatory

B. Optional

C. Both A and B

D. None of the above

6. There is only one principal officer in a company called:

A. The Chartered Accountant

B. The Company Secretary

C. The Cost Accountant

D. All of the above

7. The success indicators of well governed corporate are:

A. Corporate democracy

B. Impartial Board

C. Exemplary characters of Board Members

D. All of the above

8. The main reason(s) of corporate frauds and debacles is/are:

A. Corporate as a separate legal person

B. Dishonest board members

C. Strict compliance to corporate legal provisions

D. Only A and B

9. The difference between a shareholder and a member is:

A. Both are same

B. Shareholder is shareholder and member is member

C. Shareholder registered in the register of member becomes member

D. All of the above

10. Exactly, Tata Motors Limited is a:

A. Private limited Company

B. Public Limited Company

C. Limited Company

D. None of the above

11. Corporate Social Responsibility means:

A. Corporate is part of society

B. Society is one of the stakeholders

C. Corporate is responsible to society

D. All of the above

12. Ethic is:

A. Legal compliances

B. Doing good beyond legal mandates

C. Both A and B

D. None of the above

13. The corporate frauds put-------at mercy.

A. Prompter Group

B. Majorities

C. Minorities

D. None of the above

14. The base of Agency theory is ------------

A. Gap in ownership and management

B. Corporate Social Responsibility

C. IFRS

D. Corporate Governance

15. IFRS helps in

A. Consistency

B. Harmony

C. Creating Gaps

D. Only A and B

Answer for Self Assessment

1.	D	2.	D	3.	D	4.	D	5.	B
6.	B	7.	D	8.	D	9.	C	10.	B
11.	D	12.	B	13.	C	14.	A	15.	D

Review Questions

1. What is Annual Report of a company?

2. Write a detailed not on Management Discussion and Analysis (MD&A).

3." Corporate Governance is governing a company beyond legal mandates". Discuss.

4." IFRS is one size fitting all". Discuss.

5. What are types of Auditor's Report?

Further Readings

- Arora M. N., Cost and Management Accounting, Himalaya Publishing House, 2010.
- Pandey, I.M., Management Accounting, Excel Book, New Delhi, 2007.
- Shah Paresh, Management Accounting, Oxford University Press, New Delhi, 2009.

Web Links

- https://icmai.in/upload/Students/Syllabus2016/Inter/Paper-10New.pdf
- www.managementstudyguide.com

Unit 03:Financial Statement Analysis

CONTENTS

Objectives

In this unit, student will be able to understand:

- the meaning, objectives and importance of financial statement analysis
- comparative Statement Analysis (Horizontal Analysis)
- common Size Statement Analysis (Vertical Analysis)

Introduction

Recent trend of corporate frauds and debacle make it altogether important to have sound financial statement. The financial statement is the conclusive papers stating the affairs of the business as far as the profitability and status of the business is concerned.The two important financial statements are Trading and Profit and Loss Account; stating the operational results of the business in term of profit or loss earned by it for a particular period and the Balance Sheet; the statement of assets and liabilities of the business as on particular date.

Not only there are to be mandatorily the financial statement but it is also very important that there is done proper analysis of the said statement by the concerned stakeholder; to reach at appropriate conclusion, whatsoever.

Example:The equity investors are more concerned about Return on Investment (ROI), whereas the suppliers of inputs to the business may be interested in business cash flows for liquidity concerns, as far as the payments of theirs are concerned.

3.1 Meaning of Financial Statement Analysis

The financial accounting is done to prepare the accounting records of the company.Transaction is recorded as per the prescribed rules and regulations which are consistent.The purpose of making financial statement is to primarily present the affairs of the business for a particular period to find the:

A. Profitability

B. Financial position of the business
C. Cash flow statement

A. Profitability: The profitability of a business is found by preparing the Trading and Profit and Loss Account.This statement is prepared for a period say April 01 XXX0 to March 31,XXX1.

B. Financial Position of the Business:The financial position of a business can be found from a statement called Balance Sheet.This statement is always made for a particular date say; March 31, XXX1.

C. Cash Flow Statement:This statement shows changes in the cash and banks balances of a company form one period to another say; April 01, XXX0 to March 31, XXX1.

The changes in cash and bank balances are separately shown under three heads like:

i. Operations Activities
ii. Investing Activities
iii. Financing Activities

There are various stakeholders of a business and everyone has special and separate concern of it.

The shareholders of a company may be interested in finding the net profit available to them and they would prefer to find the earning per share(EPS).Formula for calculating Earnings per Share is:

EPS=Profit available to Equity Shareholders/Number of Equity Shares

Example:Suppose the Net Profit available for Equity Shareholders is Rupees 30,000 and number of Equity Shares are 10,000 then Earning per share =Rs.3/-

Earnings Per Share (EPS)=Rs.30,000/10,000

In second case the lenders of a company may be interested in finding the degree of interest paying capacity of the company.

In such cases the lenders would like to calculate the Interest Coverage Ratio.

Interest Coverage Ratio=Profit before interest and Tax/Interest Liability

Example:Suppose the earnings before interest and tax of Alpha Limited is Rs.60,000 and Interest liability is Rs. 6,000 then Interest coverage Ratio will be 10 times.

Interest coverage Ratio=60,000/6,000

So, it can be easily said that different stakeholders analyze the financial statements of the company in their own ways.Financial statement analysis is the process of analyzing financial statements of a company for decision-making purposes.

External stakeholders like investors, lenders, creditors use it to understand the overall health of an organization as well as to evaluate financial performance and business value. Internal constituents like managers, use it as a monitoring tool for managing the finances.

Financial statement analysis can be used by taking data of past years or present year or it can be a projection for the coming future.It is important to note that doing financial statement requires expertize and financial prudence on the part of analyst.

Caution: Degrees like Chartered Accountant (CA), Chartered Financial Analyst (CFA)and Master of Business Administration (MBA) with finance specialization help in becoming good financial analyst.

3.2 Objectives

1. Reviewing the performance of a company over the past periods:

To predict the future prospects of the company, past performance is analyzed. Past performance is analyzed by reviewing the trend of past sales, profitability, cash flows, return on investment, debt-equity structure and operating expenses, etc.

2. Assessing the current position & operational efficiency:

Examination of current profitability & operational efficiency of the enterprise to determine the financial health of the company can be found by the financial statement analysis.

3. Predicting growth & profitability prospects:

The top management is concerned with future prospects of the company. Financial analysis helps them in reviewing the investment alternatives for judging the earning potential of the enterprise.

4. Loan Decision by Financial Institutions and Banks: Financial analysis helps the financial institutions, loan agencies & banks to decide whether a loan can be given to the company or not. It helps them in determining the credit risk, deciding the terms and conditions of a loan if sanctioned, interest rate and maturity date etcetera. With the help of financial statement analysis, assessment and prediction of the bankruptcy and probability of business failure can be done.

3.3 Importance

Preparation of financial statement is not final.It extends further, to analyze the aforesaid final accounts.The process of reviewing and analyzing a company's financial statements to make better economic decisions is called analysis of financial statements.

In other words, financial statement analysis is also called the process of determining financial strengths and weaknesses of the entity by establishing the strategic relationship between the items of the balance sheet, profit and loss account, and other financial statements.

The term 'analysis' means simplifying financial data; by methodologically classifying the available data of the financial statement.

'Interpretation' means, 'explaining the meaning and significance of the data; so simplified.' However, both' analysis and interpretation are interlinked and complementary to each other.

Helpful to Finance Manager:

The finance manager has to cater to the needs of the business as far as finance arrangements are concerned. The following are the benefits accruing from the financial statement analysis:

- Assessing the operational efficiency and managerial effectiveness of the company.
- Analyzing the financial strengths and weaknesses and creditworthiness of the company.
- Analyzing the current financial position of the business.
- Assessing the types of assets owned by a business enterprise and the business liabilities.
- Providing information about the cash company is holding and how much debt the company has in relation to equity.
- Studying the reasonability of stock and debtors held by the company.

Helpful to Top Management:

The top management is definitely helped by the financial statement analysis as below:

- To assess whether the resources of the firm are used in the most efficient manner.
- Whether the financial condition of the firm is sound.
- To determine the success of the company's operations.
- Appraising the individual's performance.
- Evaluating the system of internal control.
- To investigate the future prospects of the enterprise.

Helpful to Trade Creditors:

The input suppliers are advantaged as below:

- Appraising the ability of the company to meet its short-term obligations.
- Judging the probability of firm's continued ability to meet all its financial obligations in the future.
- Firm's ability to meet claims of creditors over a very short period of time.
- Evaluating the financial position and ability to pay off the concerns.

Helpful to lenders:

The lenders to the business are benefitted as below:

- To ascertain the profitability of the company over a period of time.
- For determining a company's ability to generate cash, to pay interest and repay the principal amount.
- To assess the relationship between various sources of funds (i.e. capital structure relationships).
- To assess financial statements which contain information on past performances and interpret it as a basis for forecasting future rates of return and for assessing risk.
- For determining credit risk, deciding the terms and conditions of a loan if sanctioned, interest rate, and maturity date etc.

Helpful to Investors:

Investors are concerned about the safety of the amounts invested as well as the adequate returns at least risk should be coming to them. For this the financial statement helps them as below:

- Investors, who have invested their money in the firm's shares, are interested in the firm's earnings and future profitability.
- Financial statement analysis helps them in predicting the bankruptcy and failure probability of business enterprises.

Helpful to Labour Unions:

Employees are one of the important stakeholders of the business and are worried about the longevity of the business to which they serve. They have got aspirations and financial statement definitely helps:

- To assess whether an enterprise can increase their pay.
- To check whether an enterprise can increase productivity or raise the prices of products/ services to absorb a wage increase.

3.4 Comparative Statement Analysis (Horizontal Analysis)

Financial statements are prepared with a prime motive to ascertain the financial soundness of the business.Financial soundness of a business can be better understood when we compare the facts and figures in comparison. Therefore; comparative financial statements are one of the most commonly used tools for undertaking the financial analysis of the statements generated by the business.

Comparative statements or comparative financial statements are statements of financial position of a business at different periods. These statements help in determining the status of the business by comparing financial data from two or more accounting periods.The data from two or more periods are updated side by side, which is why it is also known as Horizontal Analysis.

The advantage of such an analysis is that it helps investors to identify the trends of business, check a company's progress and also compare it with that of its competitors.

Caution: The financial data will be considered to be comparative only when the same set of accounting principles are being used for preparing the statements.

Types of Comparative Statements:

There are two types of comparative statements which are as follows:

1. Comparative income statement

2. Comparative balance sheet

1. Comparative Income Statement:

Income statements provide the details about the results of the operations of the business, and comparative income statements provide the progress made by the business over a period of a few years. This statement also helps in ascertaining the changes that occur in each line item of the income statement over different periods.

Caution: The comparative income statement not only shows the operational efficiency of the business but also helps in comparing the results with the competitors, over different time periods.

This is possible by comparing the operational data spanning multiple periods of accounting.

1. Compare the increase or decrease in sales with a relative increase in the cost of goods sold.

2. Studying the trend of operational profits of the business.

3. Overall profitability of the business can be analysed by watching the trend of an increase or decrease in the net profit.

Steps in preparing a comparative income statement

1. Specify absolute figures of all the items related to the accounting period under consideration like Current Year and Previous Year.

2. Determine the absolute change that has occurred in the items of the income statement. It can be achieved by finding the difference between previous year values with the current year values.

3. Calculate the percentage change in the items present in the current statement with respect to previous year statements.

Comparative Income Statement
for the years ended ...

Particulars	31st March, 2012 (₹)	31st March, 2013 (₹)	Absolute Change (Increase or Decrease) (₹)	Percentage Change (Increase or Decrease) (%)
I. **Revenue from Operations**	...	...	...	...
II. **Other Income**	...	...	...	...
III. **Total Revenue (I + II)**	...	...	...	...
IV. **Expenses**				
(a) Cost of Materials Consumed	...	...	...	...
(b) Purchases of Stock-in-trade	...	...	...	...
(c) Changes in Inventories of Finished Goods, Work-in-progress and Stock-in-trade	...	...	...	...
(d) Employees Benefit Expenses	...	...	...	...
(e) Finance Cost	...	...	...	...
(f) Depreciation and Amortisation	...	...	...	...
(g) Other Expenses	...	...	...	...
Total Expenses	...	...	...	...
V. **Profit before Tax (III – IV)**	...	...	...	...
(–) **Income Tax**	...	...	...	...
VI. **Profit after Tax**	...	...	...	...

2.Comparative balance sheet:

Comparative balance sheet analyses the assets and liabilities of business for the current year and also compares the increase or decrease in them in relative as well as absolute parameters.

A comparative balance sheet not only provides the state of assets and liabilities in different time periods, but it also provides the changes that have taken place in individual assets and liabilities over different accounting periods.

Comparative Balance Sheet-Steps

1. Determine the absolute value of assets and liabilities related to the accounting periods like Current Year and Previous Year.

2. Determine absolute changes in the items of the balance sheet relative to the accounting periods in question.

3. Calculate the percentage change in assets and liabilities by comparing current year values with values of previous accounting periods.

Comparative Balance Sheet
as at ...

Particulars	Previous Year (₹)	Current Year (₹)	Absolute Change (Increase or Decrease) (₹)	Percentage Change (Increase or Decrease) (%)
I. EQUITY AND LIABILITIES				
1. Shareholders' Funds				
(a) Share Capital				
(i) Equity Share Capital	...	...	...	...
(ii) Preference Share Capital	...	...	...	...
(b) Reserves and Surplus	...	...	...	...
2. Non-current Liabilities				
(a) Long-term Borrowings	...	...	...	...
(b) Long-term Provisions	...	...	...	...
3. Current Liabilities				
(a) Short-term Borrowings	...	...	[illegible]	
(b) Trade Payables			...	...
(c) Other Current Liabilities	...	...	...	...
(d) Short-term Provisions	...	...	...	...
Total	...	...	...	...
II. ASSETS				
1. Non-current Assets				
(a) Fixed Assets				
(i) Tangible Assets	...	...	...	...
(ii) Intangible Assets	...	...	...	...
(b) Non-current Investments	...	...	...	...
(c) Long-term Loans and Advances	...	...	...	...
2. Current Assets				
(a) Current Investments	...	...	...	...
(b) Inventories	...	...	...	...
(c) Trade Receivables	...	...	...	[illegible]
(d) Cash and Cash Equivalents			...	...
(e) Short-term Loans and Advances	...	...	...	...
(f) Other Current Assets	...	...	...	...
Total	...	...	...	...

3.5 Common Size Statement Analysis (Vertical Analysis)

A common-size analysis is a tool financial managers use to learn more about a company over time.

Also known as vertical analysis, a common-size analysis expresses each line item in a financial statement as a percentage of a base amount for that time period. Common size analysis helps the financial manager better understand the impact each line item has on the organization.

The formula for a common-size analysis is:

Percentage of base = (amount of individual item / amount of base item) x 100

Yes, vertical analysis can have

1. Common Size Income Statement

2. Common Size Balance Sheet

1. Common Size Income Statement

In common size Income statement the sales are taken as 100 and other variables are taken as a percentage of already common sized sales 100, as below:

Common Size Income Statement F.Y 2022		
	Actual F.Y 2022	Common SizeF.Y 2022
Sales	100000	100
Direct Expeses	-70,000	-70
Gross Profit	30000	30
Indirect Expenses	-20000	-20
Net Profit	10000	10

In the following table another year is taken as common size Income statement:

Common Size Income Statement F.Y 2023		
	Actual F.Y 2023	Common SizeF.Y 2023
Sales	120000	100
Direct Expeses	-65000	-54
Gross Profit	55000	46
Indirect Expenses	-25000	-21
Net Profit	30000	25

In the following table both common size statement of F.Y 2022 and F.Y 2023are taken in comparison to each other. Actually this is comparative analysis also called "Horizontal Analysis".

Comparative Income Statement F.Y 2022 & F.Y 2023				
	Actual F.Y 2022	Common SizeF.Y 2022	Actual F.Y 2023	Common SizeF.Y 2023
Sales	100000	100	120000	100
Direct Expeses	-70,000	-70	-65000	-54
Gross Profit	30000	30	55000	46
Indirect Expenses	-20000	-20	-25000	-21
Net Profit	10000	10	30000	25

The following table shows the pure common sizes of Year 2022 and Year 2023 placed in comparative form.

Comparative Income Statement F.Y 2022 & F.Y 2023			
	Common SizeF.Y 2022	Common SizeF.Y 2023	Comparing F.Y 2023 With F.Y. 2022
Sales	100	100	0
Direct Expeses	-70	-54	-16
Gross Profit	30	46	16
Indirect Expenses	-20	-21	-1
Net Profit	10	25	15

2. Common Size Statement Analysis (Vertical Analysis)-Balance Sheet

The following table is an example of common size balance sheet as on Year ending 2022.

Common Size Balance Sheet					
Liabilities	F.Y 2022	% age Common Size	Assets	F.Y 2022	% age Common Size
Equity Capital	200000	25.00	Land & Building	300000	37.50
Long Term Debt	400000	50.00	Plant & Machinery	200000	25.00
Profit and Loss A/c	50000	6.25	Current Assets	300000	37.50
Current Liabilities	150000	18.75			
Total	800000	100.00	Total	800000	100.00

The following table is an example of common sized Balance Sheet as on Year ending 2023.

Common Size Balance Sheet					
Liabilities	F.Y 2023	% age Common Size	Assets	F.Y 2023	% age Common Size
Equity Capital	200000	25.00	Land & Building	250000	31.25
Long Term Debt	300000	37.50	Plant & Machinery	150000	18.75
Profit and Loss A/c	250000	31.25	Current Assets	400000	50.00
Current Liabilities	50000	6.25			
Total	**800000**	**100.00**	**Total**	**800000**	**100.00**

The following table shows two Balance Sheets pertaining to F.Y. 2022 and F.Y.2023, Common sized and also placed in Comparative analysis form (horizontal analysis form).

Comparative Balance Sheets									
Liabilities	F.Y 2022	% age Common Size	F.Y 2023	% age Common Size	**Assets**	F.Y 2022	% age Common Size	F.Y 2023	% age Common Size
Equity Capital	200000	25.00	200000	25.00	Land & Building	300000	37.50	250000	31.25
Long Term Debt	400000	50.00	300000	37.50	Plant & Machinery	200000	25.00	150000	18.75
Profit and Loss A/c	50000	6.25	250000	31.25	Current Assets	300000	37.50	400000	50.00
Current Liabilities	150000	18.75	50000	6.25					
Total	**800000**	**100.00**	**800000**	**100.00**	**Total**	**800000**	**100.00**	**800000**	**100.00**

The following table is the example when only common sized Balance Sheet are also placed in comparative form.

Comparative Balance Sheets							
Liabilities	% age Common SizeFY 2022	% age Common Size 2023	Change From 2022 to 2023	**Assets**	% age Common Size 2022	% age Common Size 2023	Change From 2022 to 2023
Equity Capital	25.00	25.00	0.00	Land & Building	37.50	31.25	-6.25
Long Term Debt	50.00	37.50	-12.50	Plant & Machinery	25.00	18.75	-6.25
Profit and Loss A/c	6.25	31.25	25.00	Current Assets	37.50	50.00	12.50
Current Liabilities	18.75	6.25	-12.50				
Total	**100.00**	**100.00**		**Total**	**100.00**	**100.00**	

The following are the inferences from the analysis of two different Balance Sheets.

Caution:

Justification

Sources and Applications tallying

Land and Building A/c: Depreciation= (6.25%)

Plant and Machinery A/c: Depreciation= (6.25%)

Profit and Loss A/c Increased=25%

Long Term Debt Paid= (12.5%)

Current Liabilities Paid= (12.5%)

Current Assets increase=12.5%

Or

		Analysis from F.Y 2022 to F.Y 2023		
Depreciation Land & Building A/c	6.25%		Debt Paid	12.50%
Depreciation Plant and Machinery A/c	6.25%		Current Liabilities Paid	12.50%
Increase in Profit and Loss A/c	25% 37.50%		Current Assets Increase	12.50% 37.50%

Summary

- Financial statement is the conclusive paper evidencing the status of the business in terms of profit or loss earned by the business for a period and the status of the business in term of assets and liabilities as on a particular date.
- The financial statement is part of business annual report. Every year the companies are mandatorily required to make annual report and in that way the financial statement is the important part of such reports.
- It is useful to have analysis of every financial statement and the analysis can be done horizontally or vertically.
- In horizontal analysis there is trend analysis in term of report of each year placed in comparison to second year. This placing helps in comparing the items of each year.
- In vertical analysis the things of each year are compared amongst. The items are common sized to the main and in this way the whole chain is coming out of common size. In this way if the set of one year common sized is placed in comparison to the set of second year in horizontal analysis form.

Keywords

Financial Statement: Annual preparation of mandatory accounts.

Horizontal: Placing things in comparison from left to right.

Vertical: Placing things in top to bottom form.

Profit and Loss Account: Statement showing all incomes less expenditures for a particular period.

Balance Sheet: Statement of Assets and Liabilities of a business as on a particular date.

Self Assessment

1. The following are the financial statement

A. Cash flow

B. Fund flow

C. Balance Sheet

D. All of the above

2. The statement showing assets and liabilities of a business as on a particular date.

A. Cash flow and fund flow

B. Balance Sheet

C. Trading Account

D. Profit and Loss Account

3.The statement showing the operational results for a period.

A. Cash flow and fund flow

B.Balance Sheet

C.Trading Account

D.Profit and Loss Account

4.The statement showing changes the cash and bank position between two dates.

A. Cash flow and fund flow

B.Balance Sheet

C.Trading Account

D.Profit and Loss Account

5.The statement showing changes in the financial position of the business between two dates.

A. Fund flow

B.Balance Sheet

C.Trading Account

D.Profit and Loss Account

6. The analysis taking sales as 100 and taking all other expenses as a percentage of sales already taken as 100 is called:

A. Trend analysis

B. Vertical analysis

C. Horizontal analysis

D. None of the above

7. Comparing sales of one year with the sales figure of another is what type of analysis?

A. Trend analysis

B. Vertical analysis

C. Horizontal analysis

D. None of the above

8. Trading account tells all about……..?

A.Net Profit

B. Gross Profit

C.Profit and loss appropriation

D. None of the above

9. Profit and Loss Account finds-----------?

A. Profit and Loss

B. Profit or Loss

C. Gross Profit

D. All of the above

10. Taking all items to one common size is an example of

.A. Vertical analysis

B. Horizontal analysis

C. Trend analysis

D. All of the above

11. Comparative analysis is also called?

A. Vertical analysis

B. Horizontal analysis

C. Trend analysis

D. All of the above

12. Gross profit is Rupees 1, 20,000 and Net Profit is Rupees 20,000 then what is indirect Rupees cost?

A. 20,000

B. 1, 00,000

C. 2,000

D.82, 000

13.Net profit ratio is 25% and value of net profits is Rupees 20,000. Find the Rupees amount of sales?

A. 1, 00,000

B. 80,000

C. 20,000

D. 40,000

14. Gross profit ratio is 25% and net profit ratio is 10%, if the net profit is Rupees 25, find the Rupees amount of gross profit?

A.75

B.37.5

C.25

D.62.50

15. Gross profit ratio is 25% and net profit ratio is 10%, if the net profit is Rupees 25, find the Rupees amount of sales?

A.75

B.250

C.25

D.62.50

Answer for Self-Assessment

1.	D	2.	B	3.	D	4.	A	5.	A
6.	B	7.	C	8.	B	9.	B	10.	B
11.	B	12.	B	13.	B	14.	D	15.	B

Review Questions

1. What do you understand by financial statement?
2. Discuss with practical example the meaning of Horizontal Analysis?
3. Discuss with practical example the meaning of Vertical Analysis?
4. Differentiate between horizontal analysis and vertical analysis?
5. "Vertical analysis in inter analysis and horizontal analysis is intra analysis". Discuss

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Unit 04 : Ratio Analysis I

CONTENTS

Objectives

In this unit, student will be able to understand:

- meaning and scope of ratio analysis
- advantages and users of ratio analysis
- limitations of ratio analysis
- types of ratios-liquidity ratios and efficiency ratios

Introduction

Financial statement is the image of the reporting entity. By this time, it is very clear that financial statement is made according the prescribed rules and regulations of the regime, which govern such businesses. The Institute of Chartered Accountants of India (ICAI) governs the system of financial statement reporting in India.

Financial statements are professional intent. For a layman/common person, the things in the financial statement are not simple. It is therefore necessary that such statements are to be analyzed to extract some crucial meanings out of it.

The ratio analysis is one the tools and techniques adopted to analyze financial statement. Ratio analysis can be inter- financial statement of intra- financial statement.

Inter financial statement analysis*:*

When both of the variables are taken from two different financial statements then it is called inter financial statement analysis.

Example: Debtors Turnover Ratio is example of inter financial statement ratio. The formula of this ratio is:

Debtors Turnover Ratio=Net Credit Sales/Average Debtors

(A net credit sale is the variable coming from Trading and Profit and Loss Account).

Average Debtors= (Opening Debtors+ Closing Debtors/2)

(This variable is coming from the Balance Sheet).

Intra financial statement analysis:

In this type of analysis, both of the variables of the particular ratio are coming from the same financial statement.

Example:

Gross profit ratio:

The formula for this ratio is:

Gross Profit Ratio=Gross Profit/Net Sales

If it is carefully observed, then one easily, reaches to the conclusion that both of the variables i.e. Gross Profit and Net Sales are coming from same financial statement, Trading and Profit and Loss Account.

Caution:Financial statement analysis is an attempt to infer some meanings from the complex financial statement, using ratios.

4.1 Meaning of Ratio Analysis

Ratio is the relationship between two variables. To have a sense from existing data, it becomes very often necessary, that the things are related to each other. Various stakeholders of a business need separate information as per their needs. The ratio analysis is the right tool in context.

1. Liquidity Ratios:

Liquidity ratios are helpful in determining the ability of the company to meet its short term obligations (within a period of one year).

1. The short term creditors namely; funds providers and suppliers of basic inputs (like; raw material, wages of workers, power corporation bill etc.) are interested in finding the payment ability/ capacity of the business.
2. It is very important that the business should be able to honor its commitment without any aberration, whatsoever.
3. Liquidity ratios are the solution to above stated situation.
4. Current Ratio, Quick Ratio, Cash Ratio are some of the ratios used by the analyst.

2. Solvency Ratios:

Solvency means the capacity of the business to pay off its long term liabilities. So it is necessary that the long term assets of the business are quite sufficient to manage long term debts. In fact, owners' money can be compared with the borrowed money or capital available or proportion of debt in relation to assets of the business.

Solvency ratios calculate the debt levels of a company in relation to its assets, annual earnings and equity.

Some of the important solvency ratios that are used in accounting are debt ratio, debt to capital ratio, interest coverage ratio, etc.

Solvency ratios are used by government agencies, institutional investors, banks, etc. to determine the long term paying capacity of a company.

3. Activity Ratio:

Activity ratios are used to measure the efficiency of the business. Efficiency means how religiously the assets of a business are managed and the very special thing about activity ratio is the use of turnover as one of the two variables.

Some of the examples of activity or efficiency ratios are: Asset Turnover Ratio, Inventory Turnover Ratio, etc.

4. Profitability ratios: The purpose of profitability ratios is to determine the ability of a company to earn profits.

Caution:A better profitability ratio over a period shows that business is performing well.

The profitability ratio can also be used for analyzing the performance of competitors of a business.

Some of the most used profitability ratios are returns on capital employed, gross profit ratio, net profit ratio, etc.

4.2 Scope of Ratio Analysis

Ratio analysis has the scope like:

1. Comparing Financial Performance:One of the most important things about ratio analysis is that it helps in comparing the financial performance of business.

2. Trend Line: Analyst use ratio analysis to establish a trend line; as far as the affairs of business are concerned. The profitability ratios for a period of five years, will definitely, throw light on the state of the profits earned by the business over a period of five years.

Caution:Graphical presentation will help in finding the trend of the profits of a business.

3. Operational Efficiency:The utilization of resources at the disposal of business, will tell everything about the efficiency of a business. Stock Turnover, Debtor Turnover, Payables Turnover are some of the ratios in context.

Steps involved in the Ratio Analysis

The following are the four steps involved in the ratio analysis:

(i) Choosing the relevant data as per the need of the analyst.

(ii) Selecting the appropriate ratio and doing the calculations.

(iii) Comparing the results with standards and benchmarks.

(iv) Taking decision.

4.3 Advantages and Users of Ratio Analysis

The ratio analysis is widely accepted as one of the powerful tools for an analyst. To interpret the financial statements, ratio analysis is used by all the stakeholders of the business namely, Investors Employees, Business Allies, Competitors, Creditors, Government, Research Scholars etc.

Caution:The use of ratios is not confined to financial managers only.

Ratio analysis helps in diagnosing the health of a business. It is the SWOT (strength, weaknesses, opportunities and threats) analysis of the business. The following are the various usages of ratio analysis.

(a) Managerial Uses of Ratio Analysis:

1. Helps in decision-making:

Ratio analysis is one of the tools to take correct decisions. The analysis coming out of the use of ratios helps the decision maker, to establish grounds, and develop over them, for taking the sound financial decision.

2. Helps in financial forecasting and planning:

All the managerial drives are to make future better. Better future can be coming only, if one is able to correctly predict and forecast the imminent things. Ratio analysis helps a lot in this context.

3. Better communicating:

Every manager is using ratios and it is worthwhile to mention that the things are better communicated; when consistent and uniform analyzing strategy in term of ratio analysis is adopted by all the concerned hierarchy.

4. Better co-ordination:

The results coming out of using ratio analysis as one the analytical tools help in better co-ordination.

5. Helps in Control:

Ratios analyze the things and results when placed in comparison (with industry benchmark), help in control process- tracking deviations, taking remedial steps.

6. Other Uses:

These are so many other uses of the ratio analysis. It is an essential part of the budgetary control and standard costing.

(b) Utility to Shareholders/Investors:

The investors are worried about the safety of the investment they make. Not only safety, best possible returns are also expected by the investors. To manage all, the use of ratio analysis is of definite help.

Example:The loan providers are worried about the safety of the principal plus honoring of interest obligations by the borrower, well in time without any default.In context, the solvency ratios like; Debt to Equity Ratio and Interest Coverage Ratio is of great help to such stakeholders.

(c) Utility to Creditors:

Creditors use ratio to find the short term solvency of the company. Current Ratio, Cash Ratio etc. are some of the ratios widely used by the analyst in such situations.

(d) Utility to Employees:

Better remunerations is the desire of every employee. Employees want hike in salary and better increments. Profitability of the business is main concern of every employee. It is only profitable companies, who can cater to such needs of the employees (in term of better remuneration).

Caution:Profitability ratios like Net Profit Ratio etc. are used by the employees.

(e) Utility to Government:

Taxes are the concern of the Government. It is the ratio analysis which helps Government, when tax is calculated on the taxable income of the business.

4.4 Limitations of Ratio Analysis

LIMITATIONS OF RATIO ANALYSIS	
1.	Limited use of a single ratio.
2.	Lack of adequate standards.
3.	Inherent limitations of accounting.
4.	Change of accounting procedure.
5.	Window dressing.
6.	Personal bias.
7.	Incomparable.
8.	Absolute figures distortive.
9.	Price level changes.
10.	Ratios no substitutes.

1. Limited Use of a Single Ratio:

Ratio analysis is limited in usage. Single ratio is of less utility until and unless the things are better related to each other using more than one ratio.

Caution:In complex situations there may be need to analyze the results; using more than one ratio.

2. Lack of Adequate Standards:

Adequate standards are lacking as far as ratio analysis is concerned. Only there are rules of thumb and that may be lesser effective in given situations.

3. Inherent Limitations of Accounting:

Personal bias of the ratio analyst may distort the results.

4. Change of Accounting Procedure:

If there is shift from one pattern to another then such inconsistency in the norms may produce different results for similar events.

Example:A change in the inventory valuation methods from First in First out (FIFO) to Last in First out(LIFO) during inflation, increases the cost of sales and reduces considerably the value of closing stocks, making stock turnover ratio to be lucrative and an unfavorable gross profit ratio.

5. Window Dressing:

Manipulations can be easily done by the use of ratio analysis. There is large scope of impurities creeping in, when the analyst prefer those norms, which are personally better for him and may be ignoring those things which may put to limelight, the inefficiencies of the said manager.

6. Personal Bias:

Ratio analysis is a part of behavioral science. Personality vices like biasedness, being stereotyped may creep and distorting the facts.

7. Un-comparable:

If the norms are not same then the things may not be similar and in consequence challenging the established fact.

8. Absolute Figures Distortive:

In ratio analysis, the qualitative aspects are altogether ignored and it is only quantative data which is used. This thing may be limiting the scope of ratio analysis.

9. Price Level Changes:

Financial statement is historical in nature and it takes the value of money to be stable. There is inflation in the world economy and ignoring inflation may be having serious dent on the results obtained by using ratio analysis.

10. Ratios no Substitutes

Ratio analysis is only an aid not a substitute.

Caution:Trend of Profitability Ratios using past data cannot guarantee the things in imminent future.

11. Clues not Conclusions:

Only clues and hints are coming out of ratio analysis. In simple words, ratio analysis is the post mortem of past data of a business.

4.5 Types of Ratios: Liquidity Ratios

Liquidity is the amount of current assets which may be used to honor current obligations.

Cash and Bank Balance are the real liquid assets of a business.

Example: The equity shareholders of a business may be interested in calculating Return on Capital Employed (ROCE).

Formula ofReturn on Capital Employed:

(ROCE) = (EBIT)/Capital Employed

Where EBIT=Earnings before Interest and Tax

Liquidity ratio is a type of financial ratio used to determine a company's ability to pay its short-term debt obligations.The metric helps in determining, how a company uses its current, or liquid, assets to cover its current liabilities.

Three liquidity ratios are commonly used –

a) Current ratio,

b) Quick ratio, and

c) Cash ratio.

Caution:In each of the liquidity ratios, the current liabilities amount is placed in the denominator of the equation, and the liquid assets amount is placed in the numerator.

Given the structure of the ratio, with assets on top and liabilities on the bottom, ratios above 1.0 are sought after.

A ratio of 1 means; a company can exactly pay off all its current liabilities with its current assets.

A ratio of less than 1 (e.g., 0.75) would imply that a company is not able to satisfy its current liabilities.

A ratio greater than 1 (e.g., 2.0) would imply that a company is able to satisfy its current bills. In fact, a ratio of 2.0 means that a company can cover its current liabilities two times over.

A ratio of 3.0 would mean they could cover their current liabilities three times over, and so forth.

1. Current Ratio

Current Ratio = Current Assets / CurrentLiabilities

The current ratio is the simplest liquidity ratio to calculate and interpret.

Caution:In current ratio current assets are divided by current liabilities.

2. Quick Ratio

Quick Ratio = (Cash + Accounts Receivables + Marketable Securities) / Current Liabilities

The quick ratio is a stricter test of liquidity than the current ratio.

The quick ratio only considers certain current assets. It considers more liquid assets such as cash, accounts receivables, and marketable securities.

Caution:Quick Ratio leaves out current assets such as inventory and prepaid expenses because the two are less liquid.

So, the quick ratio is more of a true test of a company's ability to cover its short-term obligations.

3. Cash Ratio

Cash Ratio = (Cash + Marketable Securities) / Current Liabilities

Cash ratio takes the test of liquidity even further. This ratio only considers a company's most liquid assets – cash and marketable securities.

They are the assets that are most readily available to a company to pay short-term obligations.

In terms of how strict the tests of liquidity are, one can view the current ratio, quick ratio, and cash ratio as easy, medium, and hard.

Example: Liquidity Ratios

Balance Sheet of Six Sigma			
			Millions
Liabilities		**Assets**	
Current Liabilities	200	Cash	100
Long Term Debt	300	Marketable Securities	150
Retained Earnings	200	Inventory	250
Total Equity	300	Accounts Receivable	75
		Prepaid Expenses	25
		Total Current Assets	**600**
		Long Term Assets	400
Total:	**1000**	**Total:**	**1000**

Current Ratio=Current Assets/Current Liabilities	600/200	3
Quick Ratio=(Cash+Marketable Securities+Accounts Receivable)/Current Liabilities	325/200	1.625
Cash Ratio=(Cash+ Marketable Securities)/Current Liabilities	250/200	1.25

Importance of Current Ratios:

1. Determine the ability to cover short-term obligations

Liquidity ratios are important to investors and creditors to determine, if a company can cover their short-term obligations, and to what degree. A ratio of 1 is better than a ratio of less than 1, but it isn't ideal.

2. Determine creditworthiness

Creditors analyze liquidity ratios when deciding whether or not they should extend credit to a company. They want to be sure that the company they lend to has the ability to pay them back.

3. Determine investment worthiness

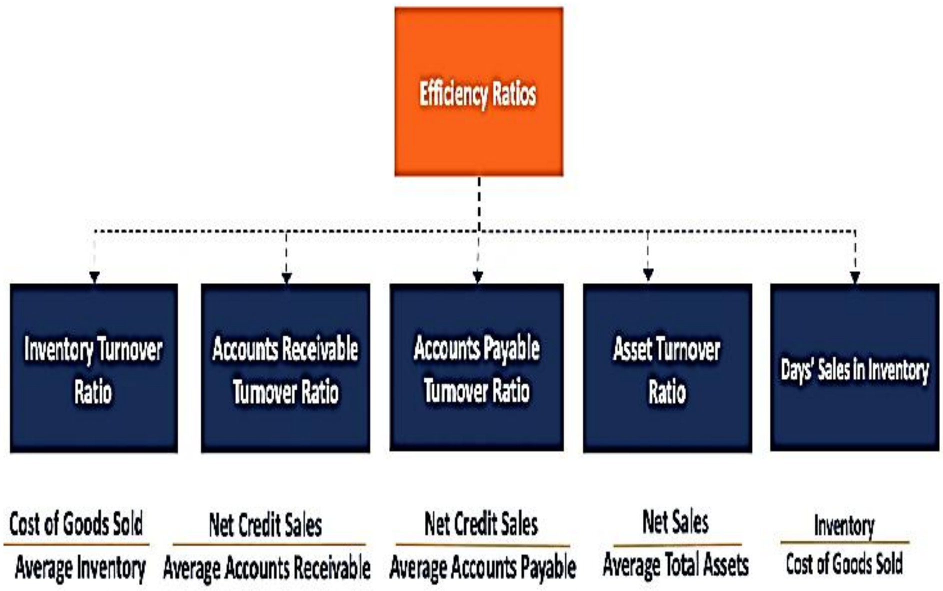
For investors, they will analyze a company using liquidity ratios to ensure that a company is financially healthy and worthy of their investment.

4.6 Types of Ratio: Efficiency Ratios

Ratios that are used in analyzing a firm's ability to effectively employ its current resources to produce income are called "Efficiency Ratios".

What is the meaning of efficiency?

The term efficiency refers to the peak level of performance that uses the least amount of inputs to achieve the highest amount of output.



1. Inventory Turnover Ratio

$$\frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

The inventory turnover ratio is expressed as the number of times an enterprise sells out of its stock of goods within a given period of time. The ratio is calculated by taking the cost of goods sold over the average inventory for a particular time period (e.g., 1 year).The higher inventory turnover is indicator that the company better uses its inventory (stock).

2. Accounts Receivable Turnover Ratio

$$\frac{\text{Net Credit Sales}}{\text{Average Accounts Receivable}}$$

Net Credit Sales are sales where the proceeds are collected at a later point in time.

Net credit sales = Sales on credit – Sales returns – Sales allowances.

Average Accounts Receivable is the sum of starting and ending accounts receivable balances over the time period (e.g., monthly or quarterly), divided by 2.

The accounts receivable ratio evaluates the efficiency of revenue collection.

It measures the number of times a company collects its average accounts receivable over a given period.

3. Accounts Payable Turnover Ratio

$$\frac{\text{Net Credit Purchases}}{\text{Average Accounts Payable}}$$

The accounts payable turnover ratio represents the average number of times a company pays off its creditors during an accounting period. Net credit purchases are taken as numerator.

Average accounts payable are taken in the denominator:-

Average accounts payable= (Opening payable+ Closing payable)/2

The accounts payable turnover ratio represents the average number of times a company pays off its creditors during an accounting period.

Net credit purchases are taken as numerator.

Average accounts payable are taken in the denominator:-

(Opening payable+ Closing payable/2)

4. Asset Turnover Ratio

$$\frac{\text{Net Sales}}{\text{Average Total Assets}}$$

Net Sales = Sales minus (Sales returns, Sales discounts, and Sales allowances)

Average Total Assets = (Total assets at the end of the period + Total assets at the beginning of the period) / 2.The higher asset turnover ratio means that the company is better using assets.

In other words, more sales per unit of asset are better.

Summary

- Ratio is the relation between two variables. Financial statement is the authentic document of a particular company. For useful information from this complex document, it becomes very necessary that the hidden facts in the financial statement are properly analyzed and interpreted.
- Ratio analysis is of great importance to all of the stakeholders of the business namely; Investors, Creditors, Lenders, Management, Research Scholars etc.
- Liquidity Ratios help in understanding the short term paying capacity (better called solvency) of the company. This category of ratios helps the short term creditors to understand the short term paying capacity of the company. Current Ratio, Quick Ratio, Cash Ratio are the examples of liquidity ratio.
- Ratios that are used in analyzing a firm's ability to effectively employ its current resources to produce income are called" Efficiency Ratios".

Keywords

Ratio: The relationship between two variables.

Liquidity: Short term paying ability.

Efficiency: The quality of being in the state of using the resources in the best way.

Turnover: Sales

SelfAssessment

1. Ratio analysis helps in

A. Unfolding the hidden meaning

B. Relating two variables

C. Establish some premises

D. All of the above

2. Which of the following is the limitation of ratio analysis?

A. Helps in finding the profitability

B. Human bias

C. Business efficiency can be found

D. Financial forecasting is possible

3. Absolute real liquid assets are:

A. Inventory

B. Cash

C. Bank Balance

D. Both B and C

4. The standard of Current Ratio should be-------than Absolute Quick Ratio.

A. Greater

B. Lesser

C. Equal

D. All of the above

5. Given current ratio equals to 1.5:1, if the current liabilities are Rupees10, 000 then the current assets are Rupees:

A. 5,000

B.10, 000

C.15, 000

D.20, 000

6.Given; Current Ratio equals to 1.5:1, if the current liabilities are Rupees10, 000 then the net working capital in Rupees is:

A. 5,000

B.10, 000

C.15, 000

D.20, 000

7. Higher debtor turnover ratio means that the speed of recovery of debtors is -------and is ------for a company?

A. High; Bad

B. Low; Bad

C. High; Good

D. Low; Good

8. Average inventory means:

A. Opening Balance

B. Closing Balance

C. (Opening Balance+ Closing Balance)/2

D.Opening Balance+ Closing Balance

9. Float is a delaying tact and is used in receivables management.

A. True

B. False

C. Both A and B

D. None of the above

10.Float is a delaying tact and is used in payables management.

A. True

B. False

C. Both A and B

D. None of the above

11. Debtor turnover is 10, the value of turnover is 1, 50,000, opening debtors are 10,000; find the value of closing debtors?

A. 10,000

B. 15,000

C. 5,000

D.20, 000

12. "Spontaneous finance is just like a crop being irrigated by not a tube well but with natural rainfall". In the light of the above statement, tell which is the correct option defining spontaneous financing?

A. Credit input supplies

B. Wages payable

C. Loan against stock hypothecation

D. Only A and B

13. Spontaneous finance is the ----finance.

A. Bad

B. Average

C. Best

D. None of the above

14. Inventory is the most -------asset.

A. Liquid

B. Illiquid

C. Both A and B

D. None

15. Idle cash is vey ---?

A. Good

B. Bad

C. Enjoyable

D. Profit

Answer for Self-Assessment

1.	D	2.	B	3.	D	4.	A	5.	C
6.	A	7.	C	8.	C	9.	B	10.	A
11.	D	12.	D	13.	C	14.	B	15.	B

Review Questions

1. What is ratio analysis? Discuss importance of ratio analysis?
2. State and discuss (any five) limitations of ratio analysis?
3. "Ratio analysis is subjective in nature needing maturity on the part of an analyst". Discuss
4. What is window dressing? Discuss window dressing by quoting a real time example?
5. What are the various users of ratio analysis?

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Unit 05: Ratio Analysis II

CONTENTS

Objectives

In this unit, student will be able to understand:

- meaning and types of Solvency Ratios
- meaning and types of Profitability Ratios
- meaning and types of Leveraged Ratios
- meaning of Du Pont Control Chart

Introduction

Ratio is a relationship between two variables. The relatedness of two different variables certainly makes some logical sense, when interpreted for some set objectives. As discussed earlier there are many stakeholders of a business and each stakeholder has got different motives from a similar business. The owner is interested in the net profits available to them whereas the long term debt/loan suppliers (financers) may be interested in finding the long term paying capacity (solvency) of the business.

To make different end meet (for different stakeholders), the ratio analysis is the right fit. In this unit, a full attempt has been made to make the readers understand the concept of applicability of the ratio analysis in different situations viz. Predicting long term solvency, profitability and leverage (incorporating debt in the capital structure of the business).

5.1 Solvency Ratios-Meaning

It helps analysts keep a close eye on how much debt a company is taking on in comparison to its assets and earnings.

If debt increases without corresponding upticks in either assets or earnings, it could be a bad sign of things to come.

5.2 Solvency Ratios: Types

1. Debt to Assets Ratio
2. Equity Ratio
3. Interest Coverage Ratio
4. Debt to Equity Ratio

1. Solvency Ratios: Debt-to-Assets Ratio

$$\text{Debt-to-Assets Ratio} = \text{Debt} / \text{Assets}$$

The debt-to-assets ratio measures how much of the firm's asset base is financed using debt.

It is calculated this by dividing a company's debt by its assets.

If a firm's debt-to-assets ratio is 0.5, that means, for every $1 of debt, there is $2 worth of asset.

2. Solvency Ratios: Equity Ratio

This ratio is calculated by dividing total equity by total assets.

This tells analysts how effectively a company funds its assets with shareholder equity, as opposed to debt.

This ratio is calculated by dividing total equity by total assets.

$$\text{Equity Ratio} = \text{Equity} / \text{Assets}$$

The higher the ratio, the less debt is needed to fund asset acquisition.

Example:Taking previous example, If a firm's debt-to-assets ratio is 0.5, that means, for every $1 of debt, there are $2 worth of assets and Equity ratio is also 0.5,meaning that the firm is having $1 equity for $2 worth of assets.

In simple words, Out of $ 2 Assets, $1 is financed by Debt and $1 is coming as finance from Equity.

3. Solvency Ratios: Interest-Coverage Ratio

$$\text{Interest-Coverage Ratio} = \text{EBIT} / \text{Interest Expenses}$$

It measures a company's ability to meet its long-term debt obligations.

It's calculated by dividing corporate income, or "earnings," before interest and income taxes (commonly abbreviated EBIT) by interest expense related to long-term debt.

A ratio of 1.5 or less is generally considered a troubling number.

4. Solvency Ratios: Debt to Equity Ratio

It is an important metric which is used to evaluate a company's financial leverage.

This ratio helps understand if the shareholder's equity has the ability to cover all the debts in case business is experiencing a rough time.

5.3 Solvency Ratios versus Liquidity Ratios

Solvency ratios measure long term financial health of a business whereas, Liquidity Ratios measure short term financial health of a business.

Solvency ratios take into consideration long term financial resources used for acquiring long term assets whereas,

Liquidity Ratios relates short term assets (current assets) with short term resources (current liabilities).

5.4 Limitations of Solvency Ratios

There's no one-size-fits-all solvency ratio. To assess the long term solvency of a business, it is needed to calculate several different solvency ratios and compare them with industry averages.

5.5 Profitability Ratios

Profitability ratio is used to evaluate the company's ability to generate income as compared to its expenses and other cost associated during a particular period.

Profitability represents final performance of company i.e. how profitable company.

It also represents how profitably owner's funds have been utilized in the company.

Types of Profitability Ratios

1. Gross Profit
2. Net Profit
3. Return on Capital Employed
4. Return on Assets
5. Return on Equity
6. Earnings per Share
7. Dividend per Share
8.Price Earnings Ratio

1. Gross Profit Ratio:

Formula: Gross Profit ÷ Sales × 100

(Gross Profit= Sales + Closing Stock – op stock – Purchases – Direct Expenses)

This ratio tells about profits after reducing direct expenses from it.

2. Net Profit Ratio:

_Formula: Net Profit ÷ Sales × 100

Net Profit = Gross Profit + Indirect Income – Indirect Expenses.

This ratio tells about net profits available to a business after having treated all direct and indirect expenses.

3. Return on Capital Employed:

Formula:

(Net Operating Profit ÷ Capital Employed) × 100

Capital Employed = Equity share capital, Reserve and Surplus, Debentures and long-term Loans

Or

Capital Employed = Total Assets – Current Liability

4. Return on Assets:

Formula: (Net Profit ÷ Total Assets)x100

This ratio measures the earning per rupee of assets invested in the company.

Higher the ratio, better the company is.

5. Return on Equity:

Formula: (Profit after Tax ÷ Net worth)x100

Where, Net worth = Equity share capital, and Reserve and Surplus.

Higher the ratio, better the company is.

6. Earnings Per Share:

Formula: Net Profit ÷ Total no of shares outstanding

This ratio measures profitability from the point of view of the ordinary shareholder.

Higher the ratio, better the company is.

7. Dividend Per Share:

Formula: Amount Distributed to Shareholders ÷ No of Shares outstanding

This ratio measures the amount of dividend distributed by the company to its shareholders. The high ratio represents that the company is having surplus cash.

8. Price Earnings Ratio:

Formula: Market Price of Share ÷ Earnings per share

This ratio is used by the investor to check the undervalued and overvalued share price of the company.

This ratio also indicates expectation about the earning of the company and payback period to the investors.

5.6 Leveraged Ratios

Leverage means employing debt in the capital structure of a company.

Debt is having fixed commitments in term of interest payments and it is due to this fact, that there is leverage available with debt incorporation

Example:Assume that Truckers Limited brings 10 million dollar worth debt @8% per annum. If the return on capital employed is 12% then there is 4 %(12%-8%) leveraged advantage from this debt incorporated.

Leveraged ratios measure the indebtedness of a company (in term of debts used as financing source).

Example:

Debt=30 Million Dollars

Equity=75 Million Dollars

1. Debt/Equity=30/75=0.40 (Debt is 40% of equity).

2. Debt/Capital=30/105=0.28 (Debt is 28% of total capital).

Leveraged Ratios:

1. Debt-to-Assets Ratio = Total Debt / Total Assets

2. Debt-to-Equity Ratio = Total Debt / Total Equity

3. Debt-to-Capital Ratio = Today Debt / (Total Debt + Total Equity)

4. Debt-to-EBITDA Ratio = Total Debt / Earnings Before Interest Taxes Depreciation & Amortization (EBITDA)

5. Asset-to-Equity Ratio = Total Assets / Total Equity

1. Debt-to-Assets Ratio:

Debt-to-Assets Ratio = Total Debt / Total Assets

This ratio measures the amount of debt per assets of a business.

Example:

Total Debt=40 Million Dollars

Total Assets=100 Million Dollars

Debt/Assets Ratio=40/100=0.40 or 40%

It means that 40% of assets are financed by Debt.

2. Debt-to-Equity Ratio:

Debt-to-Equity Ratio = Total Debt / Total Equity

This ratio measures total debt per Equity (Owners' money) of a business.

Example:

Total Debt=40 Million Dollars

Total Equity=50 Million Dollars

Debt/Equity Ratio=40/50=0.80 or 80%

It means that debt money is 80% of equity (owners' money).

3. Debt-to-Capital Ratio:

Debt-to-Capital Ratio = Today Debt / (Total Debt + Total Equity).

This ratio measures total debt proportion in the total capital.

Example:

Total Debt=40 Million Dollars

Capital=90 Million Dollars

Debt/Capital Ratio=40/90=0.44 or 44%

It means that debt money is 44% of capital of a business.

4. Debt-to-EBITDA Ratio:

Debt-to-EBITDA Ratio = Total Debt / Earnings before Interest Taxes Depreciation & Amortization (EBITDA).

This ratio measures total debt per Earnings before Interest Taxes Depreciation & Amortization (EBITDA).

Example:

Total Debt=40 Million Dollars

EBITDA=10 Million Dollars

Debt/EBITDA Ratio=40/10=4 or 4 Times

It means that debt money is 4 Times of EBITDA

5. Asset-to-Equity Ratio:

Asset-to-Equity Ratio = Total Assets / Total Equity

This ratio measures total assets per total equity of a business.

Example:

Total Assets=100 Million Dollars

Total Equity=50 Million Dollars

Asset-to-Equity Ratio = Total Assets / Total Equity

=100/50=2

It means that out of 2$ Assets, 1 $ is financed by Equity or 50% financing of Assets is done by Equity.

5.7 Du Pont Control Chart

The Du Pont Control Chart is called as such because Du Pont Company of the USA first used it.The various factors affecting the Return on Investment (ROI) are illustrated through this chart. ROI represents the earning power of the business.

Du Pont Control Chart depends on two ratios:

(a) Net Profit ratio and

(b) Capital Turnover Ratio.

Net Profit Ratio X Capital Turnover Ratio

(Net Profit/Sales)X (Sales/Capital Employed)

Net Profit/Capital Employed

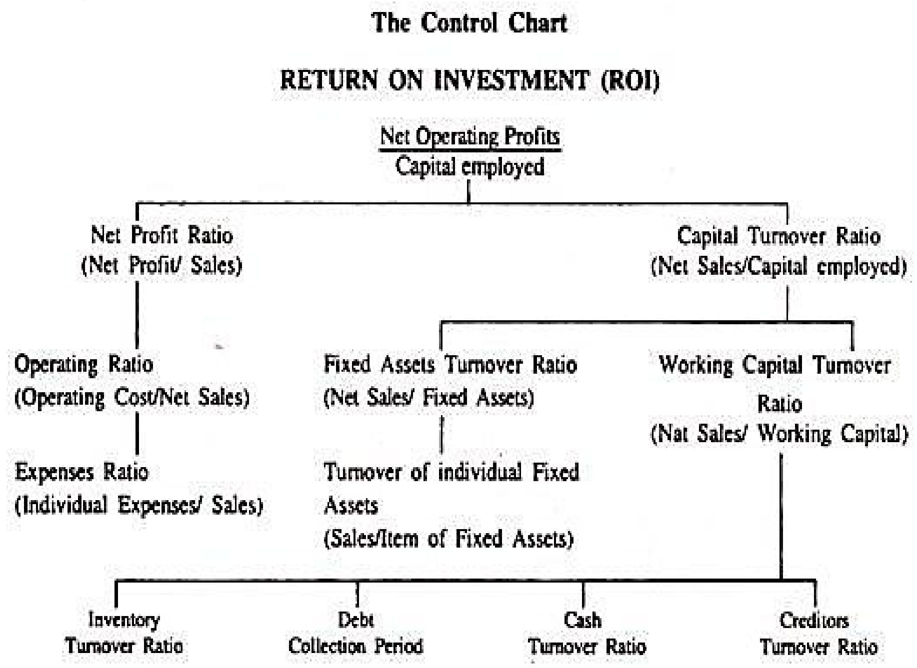
A change in any one of the two ratios will change the business earning power (i.e., ROI), and they are affected by many factors.

Any change in these factors will affect the return on capital employed.

Caution:The Du Pont Chart helps management to identify the areas of problems, which affect profit.

Example: If the cost of goods sold decreases without any corresponding decrease in selling price, the net profit will increase and therefore, ROI will also increase.

Similarly; if there is decrease in working capital, the total capital employed will decrease and therefore, in the absence of any decrease in the net profit, ROI will decrease.



Again, the Du Pont Chart helps management to identify the areas of problems, which affect profit. In other words, management can easily visualize the different forces affecting profits. The same rate of return could be obtained either by a higher net profit ratio but low turnover ratio, or by a higher turnover ratio but a low net profit ratio.

Summary

- Ratio analysis is one the important tools to analyze the financial statement of a company.
- Solvency ratios measure the long term paying capacity of the business.
- Profitability ratios measure the profits earning potential of a business.
- Leveraged ratio measures what are the advantage in term of synergies have come with the incorporation of debt in the capital structure of a company.
- Du-Pont Chart is the detailed examination with reasons as far as the profit earnings of a business are concerned.

Keywords

Du Pont Chart: Chart which examines the profit earning capacity of a business using ratios.

Leverage: Effects coming using debt as capital of a business.

Solvency: Paying capacity or Ability to pay.

Turnover: Net Sales (Sales less sales returned).

EPS: Earnings per share

SelfAssessment

1. If gross profit ratio is 25% and net profit ratio=10%, then what is the percentage of direct expenses.

A. 10

B. 15

C. 35

D. None of the above.

2. Cost of debt is15% and corporate rate of earnings is 40%. What is financial leverage?

A. 15

B. 40

C. 25

D. None of the above.

3. If dividend payout ratio is 60% then what is the retention ratio?

A.60

B.40

C.40%

D.60%

4. Solvency means:

A. Liquidity

B. Ability to pay

C. Bankrupt

D. Not bankrupt

5. What are the real liquid assets?

A. Cash account

B. Bank Balance

C. Both A and B

D. None of the above

6. Net Profit Ratio=20%; Assets Turnover Ratio=5:1. Find Return on Investment (%)?

A. 1

B. 10

C. 100%

D. None of the above

7. If EPS=Rs.10 and dividend payout ratio is 40%, find retention in Rupees?

A.10

B.4

C.6

D.60%

8. If EPS=Rs.10 and retention ratio is 40%, find dividend payout ratio?

A.10

B.4

C.6

D.60%

9. The sum of dividend pay-out ratio and retention ratio is equal to:

A.0

B.1

C. Infinite

D. None of the above

10. EBIT=Rs.25, 000; Interest Liability=Rs.10, 000; Tax Rate=30%, Find Interest Coverage Ratio?

A.2

B.2.5

C.2.5 Times

D. None of the above

11.EBIT=Rs.25, 000; Interest Liability=Rs.10, 000; Tax Rate=30%, Find Rupees earnings available for equity shareholders?

A.25, 000

B.10, 000

C.10, 500

D.4.500

12. EBIT=Rs.25, 000; Interest Liability=Rs.10, 000; Tax Rate=30%, Find Rupees tax liability?

A.25, 000

B.10, 000

C.10, 500

D.4.500

13. Mohan spends Rs. 15 on a cup of coffee and Rs.10, 00,000 on purchase of a piece of Land. Select the incorrect statement:

1) Rs. 15 on a cup of coffee is revenue expenditure.

2) Rs.10, 00,000 invested on a piece of land is expenditure

3) There is no difference between two types of above stated expenditures.

4) Expenditure of land is deferred revenue expenditure.

A. 1

B. 2

C. 3

D.4

14. Cash operating profits= Rs.14, 000 and depreciation to be debited is Rs. 1,000. Find Rupees change in cash operating profit?

A.1.000

B. No change

C.14, 000

D. All of the above

15. Find the correct statement(s):

1) Cash is profit

2) Profit is cash

3) Cash is Asset

4) Profit results in increase in assets.

A.4

B.3

C.1

D.3 and 4

Answer for SelfAssessment

1.	D	2.	C	3.	C	4.	B	5.	C
6.	C	7.	C	8.	D	9.	B	10.	B
11.	C	12.	D	13.	C	14.	B	15.	D

Review Questions

1. You are given the following facts and figure in INR:
   Net Sales =1, 00,000
   Net Profit=20,000
   Capital Employed= 10, 00,000
   What is the Du-Pont Chart Analysis?
2. Differentiate between Solvency Ratios and Liquidity Ratios?
3. "Financial leverage means incorporating debt in capital structure"? Explain.
4. From the following figures calculate:
   a) Earnings per share
   b) Price earnings ratio.

Earnings before Tax (EBT) =Rs.4, 00,000

Authorized Equity Shares=1, 00,000

Number of equity shares issued by the company=60,000

Corporate Tax=40%

Market Price of one Share=Rs. 20

[Hint: EPS=Rs.4; P/E=5:1]

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Unit 06: Profitability Analysis

CONTENTS

Objectives

In this unit, student will be able to understand:

- Meaning of profitability analysis
- Income measurement analysis
- Revenue analysis
- Cost of Sales analysis
- Expense analysis
- Variation analysis

Introduction

Businesses are set for a prime objective of maximizing profits. Yes, it is understandable that in the contemporary World of cutthroat competition, solely depending selfishly on the profits maximization approach will not work. Businesses need to be matured to understand that there is need to adopt 360 degrees holistic approach to cater to the needs of all stakeholders in term of wealth maximization approach to a business.

The concept of wealth maximization has assumed more importance than ever. In olden times the business was held in:

A. **Limited Market:**The markets were limited as compared to modern times. The modern business is held amid full use of information technology (IT). But in olden times there were seen no advancements in term of information technology usage. Hence the scope of business was limited. Interestingly, the modern business is done with the use of information technology platform to such an extent that on occasions, we seldom see the physical works of the factory. The instance of core banking solution(CBS) clearly justify the proposition that the days are gone when the company cashiers were going physically to get the cash withdrawn and then disbursing the physical notes after having the cash brought in the factory premises. But modern time is witnessing the use of Automated Teller Machines

(ATMs), Mobile Apps, Real Time Gross Settlements (RTGS), National Electronic Fund Transfers (NEFT).

B. **Lesser flow of Information:**The flow of information was very slow in olden times. It took many days to send the letters through inland letters in comparison to couriers of modern days. The use of telephones has been replaced with extensive use of mobiles in modern days. The use of internet for news has come in comparison to physical newspapers of olden days. The working of stock exchanges has been replaced with screen based trade. The scenario of clearance and settlement of stock exchanges accounts is completely changed amid revolution of information technology.

C. **Literacy of buyer and seller was limited:**With the spread of education the awareness levels of both buyers and sellers have changed in modern times. The way of thinking has changed in comparison to olden days. Now the customers are more aware of their rights plus sellers also are becoming more ethical and legal compliant may be on ethical grounds or due to in context strict rules and regulations of the regulatory.

D. **Competition**:The spirit of competition has changed. Just do one act, it will be news headline. The overall system of working has changed. Things have become so transparent that there is no scope of deception and/or ill will/

E. **Government norms:**The modern governing system has become stronger with the positive stances in term of strong regulations and effective implementation. The mass media is so strong that there is lesser scope for corruption and frauds. There is continuous update in all spheres. The system is becoming so efficient that automatically old stereotype is being replaced by the new positive inputs.

F. **Globalization**:The World is emerging as a compete market. With liberalized and global intents, there are emerging more multinationals and trans-national corporations. Definitely the old is being replaced with the new fresh.

Imagine a very good company makes negative news and this negativity certainly, will be spreading like "a Jungle fire" and devastating all the reputational premises established by the said-prosperous business. In a while people will forget all the goodness of the business andre-proving is needed.

Similarly, profitability analysis is the analyzing the business as far as profitability of it (business) is concerned. There is need to adopt a systematic approach when, doing the profitability analysis like:

1. Understanding the profit drivers of the business.
2. Evaluating each of the profit drivers.
3. Understanding the chemistry amongst the profit drivers.

6.1 Profitability Analysis

Profitability analysis is part of enterprise resource planning to understand the resource streams and chemistry amongst them, to optimize the profits of a business.

Profitability analysis never means calculating profitability ratios. It is everything related to considering all the qualitative and quantative factors into consideration to do the research to find how the profits of a business can be increased.

Caution: Promoting the positive factors- that affects the business is the essence of the profitability analysis

.

Methods of Profitability analysis:

The followings are the methods of profitability analysis:

A. Profitability Ratios

B. Customer profitability analysis
C. Qualitative analytics
D. Budgeting and forecasting solutions

A. Profitability Ratios: The profitability ratios are computed to get an idea about the profit earning capacity of the business. Return on Equity (ROE), Return on Assets (ROA) etc. are some of the ratios in context.

B. Customer profitability Analysis: In this analysis, detailed thoughts are given as far as the customers of business are concerned viz. what product is liked most categorization of customers into like retail, wholesale, industry etc., margin coming from each customer category,what after sales queries are received etc.

Caution: Customer is king and this stakeholder cannot be ignored at all.

C. Qualitative analytics: It is important for leaders to continually assess the various market conditions and relevant customer behavior patterns. This helps to identify trends and business cycles and allows leaders to plan appropriately.

D. Budgeting and forecasting solutions: Using excel sheets and integrating them with business central data bases for real time usage helps in effective budgeting and forecasting. Business managers need to adopt latest software for applicability in to real time business problems.

6.2 Income Measurement Analysis

Income measurement analysis can be done using the following four types of income measurement approaches namely:

A. The Transaction or the Operation Approach to Income Measurement:

The transaction approach is the concept of deriving the financial results of the business by recording the individual revenue, expenses and other purchase transaction. The transactions are further aggregated to find the net income or loss earned by the business.

Example: The income of Ford Limited is Rupees 10,00,000 and the expenses are Rupees 8,00,000 then the profit of this business is Rupees 2,00,000 (difference of income and expense viz. Rupees 10,00,000 less 8,00,000).

Caution: The Transaction or the Operation Approach to Income Measurement is normally adopted by the businesses.

B. **The Activities Approach to Income Measurement:**

Unlike transaction approach where transactions are the basis to measure income and expenses, in Activities Approach to income measurement, activity is considered to trigger income. It is assessment is documented on the basis of activity or event but not on the basis of transaction.

The following are the activities:

1. Planning
2. Purchasing
3. Production

4. Sales

Caution: The activity approach is broader in scope in comparison to Transaction Approach.

C. **The Balance Sheet Approach:**

In the balance sheet approach, income is measured by considering the balance sheet. The closing balance of assets is compared with the opening balance to find the income in term of profit or loss.

If the closing balance of assets is more than the opening balance of assets then there is profit and if the closing balance of assets is less than the opening balance of assets then there is loss.

D. **Value Added Approach:**

Value added refers to the addition of value to the raw material (intermediate goods)by a firm, by virtue of its productive activities.

Value Added=Value of Output-Intermediate Consumption.

Example: For making a product Sigma, the following are the details:

Input cost =	Rs.60
Wages cost=	Rs.30
Direct Expenses=	Rs.20
Total=	Rs.110
Price of the product=	Rs. 150
Value Added (Profit)=	Rs.40

6.3 Revenue Analysis

The revenue analysis is a detailed report of revenues generated by the business from its various activities. This analysis helps in finding the loopholes in term of less revenue generation.

In simple words, business managers can track the revenue performance levels of a business. A report is extracted which details the revenue generated by the various departments or wings of a business. It is worthwhile to mention that the cost analysis is part of revenue analysis.Revenues are derived from the ordinary course of business. All costs or sales and finances involved in the operation of the going concern are documented. Keep in mind that assets sold do not form part of this. Costs of production of goods and services for sale are subtracted from the revenue. As a result, the gross margin is discovered and divided by the general revenue. An upshot on the gross margin often indicates that the business is moving well and profitable. This breakdown of every conceivable cost helps know and understand performances. All sectors of the business are evaluated against past or previous records. A decision regarding the way forward is then made. Revenue analysis has got the limitations that it needs devotion of time and future estimates taking the present scenario as base may sometimes be inaccurate.

Caution: Cost analysis is an important part of revenue analysis.

Revenue analysis helps in:-

1. Taking informed decisions
2. Determining the profitability of a business
3. Future planning
4. Making investment decisions

6.4 Cost of Sales analysis

Cost of sales analysis is an attempt by the analyst to find the cost involved in the production of good or services by a business. This analysis definitely helps in controlling the cost for fulfilling the objective of profit maximization.

Trading and Profit and Loss Account gives information about the cost of goods sold and income derived.

A) The Trading Account:

The Trading Account takes note of direct income in term of sales and direct cost to find the gross profit. The direct cost includes:

1. Direct material consumed
2. Direct wages
3. Direct expenses

Equation of trading account:
Opening stock+ Raw material purchased+ Direct Wages+ Direct Expenses+ Gross Profit= Sales + Closing Stock

B) Profit and Loss Account:

Profit and Loss Account take note of indirect expenses and it is always made after Trading Account has been made.

Equation of Profit and Loss Account:
For Profit:-
Indirect Expenses+ Income Tax+ Net Profit=Gross Profit+ Indirect Incomes (if any)
For Loss:-
Indirect Expenses=Gross Profit+ Indirect Incomes (if any) - Net Loss

6.5 Expense Analysis

Expenditure analysis involves processing a small amount of relevant procurement data in order to learn from it and thereby improve operations. It should be carried out in the context of a clear, shared procurement strategy.

Meaningful expenditure analysis must follow a strict methodology, organized into three steps:

1. Collecting a selection of relevant data
2. Formalizing priority actions
3. Sharing operational objectives with all stakeholders

The aim of an expenditure analysis is to improve the company's overall performance. With this in mind, the challenge for the first step is to begin by identifying data that will be useful for the analysis, and to not waste time and energy by collecting unusable data.

The second step of the expenditure analysis aims to prioritize actions. This means focusing on the most obvious areas for improvement.

The aim of the third step in this approach is to agree a clear plan to implement these actions with internal stakeholders.

In conclusion, analyzing expenditure is only beneficial if, one knows what to achieve and if there are the means to take concrete action. For this reason, adopting a procedure that is geared towards producing tangible results is essential.

6.6 Variation Analysis

What is 'Variance Analysis'

Definition: Variance analysis is the study of deviations of actual behavior versus forecasted or planned behavior in budgeting or management accounting. This is essentially concerned with how the difference of actual and planned behaviors indicates how business performance is being impacted.

Description: Variance analysis can be broken down into 2 steps:

1. Calculating and recording individual variances

2. Understanding the cause of each variance

Reasons for variances can be either of the following:

1. Change in market conditions, which have rendered the standard budgeting practices unrealistic, e.g. short supply of raw materials causing suppliers to hike prices

2. Budgeting standards followed may be too idealistic in nature, e.g. output of a machine may be wrongly assumed

3. Service delivery may not be up to the mark, e.g. planning may have taken into account an eight hour working day, however actual ground conditions may only allow six hours a day

4. In certain cases, there can be no basis for planning, e.g. output of creative activities cannot be benchmarked to a high level of accuracy.

Types of Variances:

Variances may be classified under the below mentioned heads:

1. Material Variances: - These arise from the difference between actual costs of materials used in production and standard costs of materials specified for the goods produced. This comes into play because of the difference in quantities consumed and quantity initially allocated for production. The can also happened due to the difference in price paid and price budgeted for materials used.

2. Labor variances: - This denotes the actual wage paid to workers versus the standard wage prevalent for the output specified. When the actual labor costs are more than budgeted ones, the variance is unfavorable.

3. Overhead variances: - It may be defined as the sum total of indirect material, labour and expense costs. Overhead variances may arise due to the difference between standard overhead costs budgeted and the actual overheads incurred.

Example:

In the manufacturing of Chocolate candy Box the estimates are as below:

Input A: 2 Kgs. @ Rs.1, 000/Kg.

Input B: 3 Kgs. @ Rs. 3,000/Kg.

Actual Data:

Input A: 2.25 Kgs. @ Rs.1, 100/Kg.

Input B:2.75 Kgs. @Rs.2, 950/Kg.

Solution:

	Standard		
	Input A	**Input B**	**Aggregate(Rupees)**
Material	2 Kgs.	3 Kgs.	
Price	Rs.1000/Kg.	Rs.3000/Kg.	

Total Cost(Rupees)-A	2,000	9000	11,000
	Actual		
Material	2.25 Kgs.	2.75 Kgs.	
Price	Rs,1100/Kg.	Rs,2950/Kg.	
Total Cost(Rupees)-B	2475	8112.5	10587.5
Variance(Rupees)C=(A-B)	**-475**	**887.5**	**412.5**
Analysis			
PrIce Variance(Actal Price-Standard Price)	-100	50	
Standard Quantity	2	3	
Total Price Variance=(Price Variance X Standard Quantity)-D	-200	150	-50
Qty. Variance(Actual Qty.-Standard Qty.)	-0.25	0.25	
Actual Price/Kg (Rupees)	1100	2950	
Usage Variance=(Qty. Variance X Actual Unit Price)-E	-275	737.5	462.5
Total Cost Variance Rupees=(Total Price Variance+Usage Variance)F=(D+E)	**-475**	**887.5**	**412.5**

Summary

- Profit is the essential part of business and it is very necessary that the profitability of the business is measured with utmost accuracy.
- The profitability is the success indicator of business .Directly or indirectly it is profitability that governs the interest of every stakeholders viz. Investors, managers, employees, Government, last by not the least the top board of a company.The followings are the methods of profitability analysis:
    - Profitability Ratios
    - Customer profitability analysis
    - Qualitative analytics
    - Budgeting and forecasting solutions

- Income measurement analysis can be done using the following four types of income measurement approaches namely:
    - The Transaction or the Operation Approach to Income Measurement:
    - The Activities Approach to Income Measurement:
    - The Balance Sheet Approach:
    - Value Added Approach:
  - Expense Analysis: Expenditure analysis involves processing a small amount of relevant procurement data in order to learn from it and thereby improve operations.
  - Variation Analysis: Variance analysis is the study of deviations of actual behaviour versus forecasted or planned behaviour in budgeting or management accounting. This is essentially concerned with how the difference of actual and planned behaviours indicates how business performance is being impacted.

Keywords

- **Profitability analysis**: Measuring and scanning reasons of profits.
- **Income Drivers:** Income generating sources of a business.
- **Revenue**: Money, Cash
- **Gross Profit:** Direct Income less direct expenses.

Self Assessment

1. The methods of profitability analysis include:
A. Profitability Ratios
B. Customer profitability analysis
C. Qualitative analytics
D. All of the above

2. Income measurement analysis can be done using the following approach(es):
A. Value added approach
B. Balance sheet approach
C. Activity approach
D. All of the above

3. Balance sheet approach measures income by taking:
A. Opening balance of assets
B. Closing balance of assets
C. Reducing opening balance from the closing balance of assets
D. All of the above

4. Which of the following statement(s) is incorrect?
A. Increase in assets is income
B. Decrease in assets is loss
C. Profit is the value addition
D. None of the above

5. Revenue analysis is helpful in finding:
A. Incomes
B. Monies
C. Margins
D. All of the above

6. Revenue analysis helps in:-
A. Taking informed decisions
B. Determining the profitability of a business
C. Future planning
D. All of the above

7. Which of the following is not the limitation of revenue analysis?
A. Needs time devotion
B. Estimation error may creep in forecasting
C. Very simple
D. None of the above

8. Trading account takes account of:-
A. Direct Income and Direct expenses
B. Indirect Income
C. Indirect Expenses
D. None of the above

9. Opening stock+ Purchases- Closing Stock is equal to:-
A. Gross Profit
B. Raw Material Consumed
C. C.Net Profit
D. None of the above

10. Expenditure analysis is:
A. Less time consuming
B. Cost control strategy
C. Needs to be selective
D. Both B and C

11. The real meaning of expenditure is:
A. Cash spending
B. Value expended
C. Value expended for some reciprocal value
D. All of the above

12. Variance is:
A. Standard
B. Actual
C. Difference between standard and actual
D. Difference between actual and standard

13. Variance can be of:
A. Material
B. Labour
C. Overhead
D. All of the above

14. Efficiency means:
A. Productivity
B. Input/ Output
C. Output/Input
D. None of the above

15. Cost control means:
A. Spending lesser amount
B. Being miser
C. Being cost effective
D. All of the above

Answer for Self Assessment

1.	D	2.	D	3.	C	4.	D	5.	D
6.	D	7.	C	8.	A	9.	B	10.	D
11.	C	12.	C	13.	D	14.	C	15.	C

Review Questions

1. What is the meaning of income drivers? Discuss any five income drivers of a business.
2. Write a detailed note on profitability analysis.
3. What is the value added concept of income measurement?
4. What are the limitations of revenue analysis?
5. What is cost of sales analysis?
6. What are the objectives of expenditure analysis?

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Unit 07:Risk and Return

Objectives

In this unit, student will be able to understand:

- meaning of risk and return
- calculating return
- types of risk
- relationship between risk and return

Introduction

Businesses are done amid risk. Future is uncertain. No one can tell what will happen on this day after fifty years from now! This uncertainty of future is literally called 'risk'. Risk means that the future happening may not be according to the projection or expectations. The higher the degree of variability the higher is prevalence of the risk.

All attempts of this World are made to predict the imminent times with accuracy. It is not so easy to predict the future but also one cannot give up in the situations, as far as risk prediction is concerned. Various statistical tools are applied to estimate the risk in the future like:

1. Probability

2. Expected Value

3. Variability or Dispersion

4. Standard Deviation (SD)

Example 1:

Given that the student is getting the Cumulative Grade Point Average (CGPA) as below:

Semester 1: 6.5

Semester 2:7.0

Semester 3: 7.1

Semester 4:?

Now the question arises as to what cumulativepoint grade average (CGPA) will the student be having in semester 4?

If one carefully follows the trend then it seems to be like that the performance of the student is lying between 6.5 to 7.0 and expected point scale has to be between this range of 6.5 to 7, assuming that the things are normal and nothing like special circumstances have arisen in semester 4 to affect the performance of the student.

Similarly, in business problems, there is wide scope of applicability of risk and return concepts to understand the expected profitability of the business amid prevalent environmental factors.

7.1 Meaning of Risk and Return

Risk meaning:

Risk means accepting a challenge. The investors take risk when they took a challenge in term of parting with their fortune- money. It is understandable that the investors are making investment with a motive to make more money in term of return from the concerned investment decision. The quest is to make maximum money and it may not be possible to meet with this expectation of making "MAXIMUM PROFITS".

The uncertainty of not having the future expectations met is literally called "risk". The higher the chances of fluctuations in term of meeting the expectations the higher is the degree of prevalent risk.

Does it mean that the risk should not be taken?

No, it never means that the risk should not be taken. Risk has to be taken, but it should be only the calculated risk (but never an unlimited risk).

Return Meaning:

Reciprocal reward when risk is taken is called return. Return should never be meant to be only positive but it can be negative also.

If reward is assumed to be positive only then people will be taking ton of risk to get positive returns in reciprocation. But this never happens in this materialistic World.

Now the question arises, if risks in business should be taken or not?

It should never be assumed that risk should not be taken. Yes, risk has to be taken, but it should be only calculated one better called "Calculated Risk".

It is worthwhile to mention that only calculated risk has to be taken and unlimited risk has to be avoided.

Example 2:

Let us take two different cases of Mr. M and Mr. P

Case 1:

1. Mr. M invested Rupees 1, 00,000 in an investment option and after one year down the lane he gets the invested amount increased to Rupees 1, 25,000.

Inference: The return of Mr. M is 25% profits.

Case2:

2. Mr. P invested Rupees 1,00,000 in an investment option and after one year down the lane he gets the invested amount decreased to Rupees 75,000 only

   Inference: The return of Mr. P is 25% loss.

   In conclusion it can be said that both Mr. M and Mr. P invested amounts in their preferred options and one (Mr. M) is having positive return of 25% where as other (Mr. P) is having negative return of 25%.

Simply return is something got in reciprocation, may be positive or negative.

7.2 Calculating Return

Return calculations mean knowing what the actual growth is achieved after the investment has been made. It is just finding the growth and relating the growth with the initial invested money.

Return on Investment (ROI) is the common used ratio to calculate the returns. Formula of Return on Investment is:

ROI = Net Income / Cost of Investment

Or

ROI = Investment Gain / Investment Base

From Example 2, above it is clear how to calculate return on Investment.

Case 1:

1. Mr. M invested Rupees 1, 00,000 in an investment option and after one year down the lane he gets the invested amount increased to Rupees 1, 25,000.

   Inference: The return of Mr. M is 25% profits.

   ROI= (25,000/1, 00,000) X100
   =25% Profit
   [Rupees 25,000= Net Income
   Rupees 1, 00,000= Cost of Investment]

Case2:

2. Mr. P invested Rupees 1,00,000 in an investment option and after one year down the lane he gets the invested amount decreased to Rupees 75,000 only

   Inference: The return of Mr. P is 25% loss.

   ROI= [(-) 25000/1, 00,000] X100

   ROI=25% Loss

   [Rupees 25,000= Net Loss
   Rupees 1, 00,000= Cost of Investment]

Benefits of Return on Investment formula (ROI):

1. Easy to understand and apply.

The return on investment (ROI) is very easy and simple to understand. There are no confusions in understanding the norms which lie at the premises.

2. Universally accepted.
   It is universally accepted due to the reason that there are no ambiguities and complexities involved in the calculations of return on investment.

Limitations of Return on Investment formula (ROI):

1. It ignores time value of money.

Time value of money(TVM) is based on the notion that a unit of money received today is more important than a unit of money received in future. The formula of return on investment takes value of money to be constant.

Example:

Rupees 100 received today is more important than Rupees 100 received after one year.

Simply, the world has got inflation and there is fall in the value of money with every click of the watch. It is due to this reason that the present money has to be increased by a minimal rate. So the value of One Hundred Rupees note is not same in the beginning and at the end of first year. Definitely, Present value and Future value are the two types of value in the concept of time value of money.

2. It is subject to manipulation when norms are changed to show more than the actual.

The return on investment formula takes note of return and Investment. A very shrewd manager may be adjusting the existing norms to calculate more returns to window dress his /her performace. Window dressing of performance means try to show more or less than the actual.

7.3 Types of Risk

Risk can be classified into two broad categories:

1. Systematic Risk
2. Unsystematic Risk

Systematic Risk:

Systematic risk comes from system. System means, like system of the Country in which the business is located. This type of risk is coming from external environment and is beyond the control of firm.

Unsystematic Risk:

Unsystematic risk comes from the firm itself. This type of risk is firm specific and internal environment of the business is the creator of this risk.

So, the total risk =Systematic Risk + Unsystematic Risk

Risk can be classified into other categories as well. Below is the detail of other classification of risk:

1. Political/Regulatory Risk – The impact of political decisions and changes in regulation[Systematic Risk]. The law making machinery of the country and the consequent laws are included in this category. It is very simple to understand that if the US multinational comes in India then it is definite that the Indian laws are to be honored by this American company. Quite often, the multinationals face dilemma when it comes to honor the laws of host country away from home country.

2. Financial Risk – The capital structure of a company (degree of financial leverage or debt burden) [Unsystematic Risk] The prevalence of debt in the capital structure of the company brings this type of risk. For instance,

Rate of earning of a company is 40% and this company has incorporated the capital in following two ways:

A. Case of 100% Equity
B. Case of 50% Equity and 50% Debt

Case of 100% Equity:

Now it is given that the rate of earning of company is 40% and with 100% equity financing the company has to apportion profits @40%.

Case of 50% Equity and 50% Debt:

It is already given that the rate of earning of the company is 40% and let us assumes that the debt incorporation is @ 12%. Now what is the per Rupee earning?

It is 40%

What is per Rupee paying obligation on the debt?

It is 12%

It means that the company is earning 40% on the debt money and paying @12%. So there is prevalence of leverage @28% (40%-12%).

3. Interest Rate Risk – The impact of changing interest rates[Systematic Risk]

Every country has got one Central Bank and it is this central bank which set pace of the interest rate is the economy. Rates are changed to establish the impacts of monetary policies. So all this establish the quantum of interest rates on the debt is a particular economy.

4. Country Risk – Uncertainties that are specific to a country [Systematic Risk]

The peace and harmony of the country set the pace of this type of risk. Given that a particular country is in war crisis, then no one will be interested in investing in that country. The reason being it is highly risky to invest in a political unstable country.

5. Social Risk – The impact of changes in social norms, movements, and unrest [Systematic Risk]

The customs, tastes, fashions, preferences, rituals, habits etc. of a country comes in this type of risk. Corporates definitely find social suitability while entering a particular country.

6. Environmental Risk – Uncertainty about environmental liabilities or the impact of changes in the environment [Unsystematic Risk]

Environment caring and being green is the mantra of present day. Howsoever the financial position of a company can be, but if constrained by the environmental laws, then the survival is questionable.

7. Operational Risk – Uncertainty about a company's operations, including its supply chain and the delivery of its products or services [Unsystematic/Unsystematic Risk]

The companies well measure the operational hurdles before venturing into any of the country for business. There has to be operational support in term of availability of the respective infrastructure.

8. Management Risk – The impact that the decisions of a management team have on a company [Unsystematic Risk]

The respective business has to be manageable. It should be possible for the management to carry the objectives of the business in a way which is perfect. If there are management issues then no promoters will be giving green signal till the entire in context doubts are cleared.

9. Legal Risk – Uncertainty related to lawsuits or the freedom to operate [Systematic Risk]

The law of the country in term of jurisdictional domain of cases has to be well found by the concerned company before entering into any of the business category.

10. Competition – The degree of competition in an industry and the impact choices of competitors will have on a company [Systematic Risk]

The prevalence of fair competition is a paramount necessity. If the positive competition is there then every excelling business will be interested to join the group as camaraderie.

In conclusion, it can be stated that the above classification can again be adjusted into two broad classifications namely: Systematic Risk and Unsystematic Risk.

7.4 Relationship between Risk and Return

There is direct relationship between risk and return. With more risk, there are more returns.

Caution:

Return may be positive or negative.

Capital Asset Pricing Model (CAPM) is the model which describes the relationship between risk and return.

Capital Asset Pricing Model (CAPM)

$$Expected\ Return = r_f + \beta(r_m - r_f)$$

$$r_f = risk\ free\ rate$$
$$\beta = Beta$$
$$r_m = return\ on\ the\ market$$

Or

Capital Asset Pricing Model= Risk free rate+ Risk Premium

Risk Free Rate(Rf):

Risk free rate is the bank rate. It is the rate which one can get normally without any additional efforts done.

Beta:

Beta is the volatility of the individual security against market portfolio.

Return on market portfolio (Rm):

Return on market portfolio means the return which the market index is generating.

Risk Premium=Beta[Return on Market Portfolio(Rm)-Risk Free Rate(Rf)]

Example 3:

Suppose the price of Share of Z Limited increases by 20%, whereas the market portfolio increases by 10%.

In this case Beta of Share of Z Limited:

Beta =20%/10%

Beta=2

It means that the sensitivity of price change of Z Limited is double than that of market.

The risk free rate ($r_{f)}$ is 6%

Beta=2

Return on market portfolio (r_m) is 10%

Find the expected return on Investment?

Solution:

Expected Return= Risk free rate (Rf) +Beta [(Return on market portfolio (Rm) - Risk free rate (Rf)]

Expected Return=6%+2[10%-6%]

Expected Return=6%+2[4%]

Expected Return=6%+8%

Expected Return=14%

Example 4:

The risk free rate (Rf)] is 6%

Beta=1.5

Return on market portfolio (rm) is 4%

Find the expected return on Investment?

Solution:

Expected Return= Risk free rate (Rf) +Beta [(Return on market portfolio (Rm) - Risk free rate (Rf)]

Expected Return=6%+1.5[4%-6%]

Expected Return=6%+1.5[-2%]

Expected Return=6%-3%

Expected Return=3%

Reason: The market portfolio is already getting the return @4% which is below than risk free rate @ 6%.

Indirectly market return is in comparison to risk free rate is 2% less(6%-4%) and the beta of the security is@1.5 times.

It means that the individual security will be 1.5 times to the actual behaviour of market portfolio.

If market portfolio dips below by 2% then the individual security will dip 1.5 times of 2%, which is equal to 3%(1.5X2).

Summary

- Risk is inherent to a business. Risk means that the future may not be unfolding as expected. It is therefore very necessary that the risk to a business is managed with utmost excellence.
- Risk of a business can be systematic or unsystematic.
- Systematic risk comes from the system of the country in which the business is established. The unsystematic risk comes from the Firms itself. In other words, business Firms have no control over the systematic risk but unsystematic risk is well within the domains of a business.
- Capital Asset Pricing Model (CAPM) is a model which best describes the relationship amongst the risk free rate, market portfolio rate, Beta of a specific security.
- Return means reward. In the context of businesses, the return means both growth and decline in the prospects of the business over a period of time.
- Risk and reward has got direct relationship between them. For more risk there is more reward and vice versa.

Keywords

Risk: The degree of variability of expected outcome.

Return: The growth in investment.

Systematic Risk: Risk coming from factors external to a business.

Unsystematic Risk: Risk coming from Firm specific factors.

CAPM**:** Capital Asset Pricing Model.

Political/Regulatory Risk – The impact of political decisions and changes in regulation [Systematic Risk]

Financial Risk – The capital structure of a company (degree of financial leverage or debt burden) [Unsystematic Risk]

Interest Rate Risk – The impact of changing interest rates [Systematic Risk]

Country Risk – Uncertainties that are specific to a country [Systematic Risk]

Social Risk – The impact of changes in social norms, movements, and unrest [Systematic Risk]

Environmental Risk – Uncertainty about environmental liabilities or the impact of changes in the environment [Unsystematic Risk]

Operational Risk – Uncertainty about a company's operations, including its supply chain and the delivery of its products or services [Unsystematic Risk]

Management Risk – The impact that the decisions of a management team have on a company [Unsystematic Risk]

Legal Risk – Uncertainty related to lawsuits or the freedom to operate [Systematic Risk]

CompetitionRisk – The degree of competition in an industry and the impact choices of competitors will have on a company [Systematic Risk]

SelfAssessment

1. Risk means degree of --------in expected outcomes.

A. Equality

B. Differential

C. Variability

D. Comparison

2. Return means ----------in initial investment.

A. Increase

B. Decrease

C. Growth

D. All of the above

3. There is -----------relationship between risk and return.

A. Inverse

B. Direct

C. Indirect

D. Negative

4. Risk can be broadly classified as-------------and ------------.

A. Political

B. Country

C. Financial

D. Systematic and Unsystematic

5. More risk more reward means:

A. More profits are there when more risk is taken

B. More losses are there when more risk is taken

C. There can be more profits or more losses, when certain degree of risks is taken.

D. None of the above.

6. Risk free rate is 5% and risk premium is 8% then what is the total return on Investment?

A. 5%

B. 8%

C. 13%

D. 3%

7. If total return on assets is 14% and risk premium is 4% then what is risk free rate?

A. 14%

B. 4%

C. 10%

D. 18%

8. Debt instruments have got-----rate of incomes.

A. Variable

B. Fixed

C. Semi fixed

D. Semi variable

9. Equity investments have got---------incomes?

A. Variable

B. Fixed

C. Semi fixed

D. Semi variable

10. Balanced investment options have got--------incomes?

A. Variable

B. Fixed

C. Semi variable

D. Both B and C

11. In broad sense, the cost of investment can be stated as--------?

A. Return

B. Risk

C. Profitability

D. None of the above

12. Capital asset pricing model equation considers:

A. Risk free rate

B. Risk premium

C. Both A and B

D. None of the above

13. Beta is measure of risk of -------with ---------portfolio?

A. Asset

B. Liability

C. Individual security; market portfolio

D. All of the above.

14. With Beta 2, the return on my assets will be --------than of market portfolio?

A. Half

B. Double

C. Equal

D. None of the above

15. With Beta 1, the return on my assets will be --------than of market portfolio?

A. Half

B. Double

C. Equal

D. None of the above

Answers for Self Assessment

1.	C	2.	C	3.	B	4.	D	5.	C
6.	C	7.	C	8.	B	9.	A	10.	C
11.	B	12.	C	13.	C	14.	B	15.	C

Review Questions

1. What is the meaning of Return? How it is calculated?
2. What is risk? Discuss systematic risk and unsystematic risk?
3. What is risk return trade-off?

Further Readings

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Web Links

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- https://corporatefinanceinstitute.com/resources/knowledge/finance/risk/
- https://financeformulas.net/Capital-Asset-Pricing-Model.html#:~:text=The%20capital%20asset%20pricing%20model,and%20the%20risk%20free%20rate.

Unit 08: Budgeting

CONTENTS

Objectives

In this unit, student will be able to understand:

- Concept of budgeting
- Meaning of Budgetary Control
- Budgeting Process
- Advantages and limitations of Budgeting
- Types of Budgets
- Preparation of Cash Budget, Flexible Budget, Sales Budget and Production Budget
- Zero Base Budgeting

Introduction

Budgets are the future estimation. Such estimations may be of revenues, expenses, production quantity or sales targets etc. It is worthwhile to mention that predicting future with accuracy is the utmost need for business excellence.

Budgeting is one of the approaches in context. The process of making budgets is called 'Budgeting' and using budgets for controlling businesses operations is called 'Budgetary Control'. It is worthwhile to mention that, the organization structure must support the system of making budget.

Caution:Doing budgeting and using budgets for control better spelled as 'budgetary control'.

In simple words, there has to be a system in the organization of making budgets plus using budgets for control purposes and all this must be coming from the top viz. will of top management and organizational structure supporting installation of budgetary control.

8.1 Concept of Budgeting

The process of making budgets is called budgeting. Budgeting is part of budgetary control. The philosophy of budgetary control is the intent of the management to use budgets as one of the techniques to manage business. It is certainly a part of organizational values. Budgets are helpful and beneficial to a particular organization.

Caution:Budgets are the thought of 'making oneself ready for future'.

Budgeting is the tactical implementation of business plans. Budgets are the links between WHERE WE ARE and WHERE WE WANT TO BE.

- Budgets are the plans may be financial or non- financial.
- Budgets definitely help in facing the future with readiness.
- Budgets help on measuring the business excellence.

8.2 Meaning of Budgetary Control

Given that a particular organization is determined to work on budgetary control then it means that there will be:

- Making of budgets
- Taking budgets as base to formulate work plans.
- Comparing the actual performance with the budgeted targets
- Observing deviations.
- Taking corrective actions.

8.3 Budgeting Process

Budgeting process involves planning and forecasting, implementing, monitoring and controlling and finally evaluating the performance of the budget.

1. **Preparing the Base for the Budget according to Funding:**This is the preliminary step of budgeting process. In this step, the details are collected as to what is the expectation from making budgets and scanning the environment of the business.
2. **Creating a Cost Buffer:**It is very essential that the true estimation of the cost is made to be incorporated in the budgets. So all-out attempt is made to estimate the concerned costs involved in doing a particular activity.
3. **Preparation of Revenue and Expenditure Budget:**The next important step is to prepare different types of subsidiary budgets for the organization. Proper and realistic forecasts of expenses and revenuesare made in term of different types of budgets such as, sales budget, production budget, cash budget etc.
4. **Incorporating Departmental Budgets to one master budget:**The budgets of the various smaller departments are combined and integrated to make master budget.
5. **Incorporating Bonuses:**Bonuses are declared by the corporate at appropriate times and it is very necessary that huge expenditures involved in all such declarations are well considered and incorporated in the budgets.
6. **Provision for Capital Expenditure:**The expenditures to be made in acquiring the fixed assets are called capital expenditure. It is therefore very necessary that all such big sized expenditure are properly projected and duly considered.

7. **Changes in the Budget Model and Review:**After having made the budgets, it is then sent to the top management for consideration, to give go ahead signal. If there are any suggested changes, that are considered.
8. **Budgetary Controls:**Making and implementing the budgets is not final. Still there is next step called the budgetary controls. The purpose of this step is to check the utility derived from this exercise of making budgets. The actual things are now compared with the budgetary targets to find variances or deviations.

8.4 Advantages and Limitations of Budgeting

Advantages of Budgeting:

The following are the advantages of the budgeting process:

1. **Aids in the planning of actual operations:**Budgets definitely help in planning the business operations. Actually, budgets are the business strategies to be used in the coming period, say for one year. The things are automatically planned when there is done estimations, as to what is to be done with what allocations (better spelled as budgeting).
2. **Coordinates the activities of the organization:**In budgeting there are estimates made in respect of every department. This thing helps in division of work. Again, the total smaller things are co-ordinated into one, when master budget is made for the organization as a whole.
3. **Communicating plans to various manager:**Departmental budget is departmental plan. Technically, it is communicating the concerned department as to what is to be done. It acts as standard setting phase.
4. **Motivates managers to strive to achieve the budget goals:**In budgeting process, the targets are clearly established with the active involvement of the concerned departmental managers. The funding is also done, keeping the concerned managers in confidence, which can be a big motivational force in terms of achievements and recognition.
5. **Control activities:**Budgetary targets help in controlling the performances of the concerned managers. This is done when actual performance is compared with budgeted targets.
6. **Evaluate the performance of managers:**In this step the performance of the concerned manager is related with the established targets and variances, if any, are considered for improvements. It is synonymous with the performance evaluation of the concerned manager.

Limitations of Budgeting:

Budgeting is an important exercise mandatorily to be done by every organisation. Although there are advantages of budgeting yet there are few limitations as discussed below:

1. **Inaccuracy:**Budgeting is based on many assumptions. There are done estimations of incomes and expenditures. Any changes brought in by the macro environment variables like, interest rate, inflation rate, currency rates etc. can affect the estimates making budgeted targets inaccurate.
2. **Time consuming and costly:**Budgeting exercises are time consuming and costly. There is cost involved in establishment of budgetary process in an organisation. Sometimes it cannot be afforded by smaller organisations.

3. **Rigidity:**Budgets set targets and in this way such targets act as rigid guidelines to be followed in every situation. Budgeted numbers are considered sacrosanct by all the departments with little flexibility.

Everyone is having obsession to achieve the budgeted targets to get better appraisals. Additionally, the top management becomes too much dependent on the budgeted numbers and in obsession with budgets; any of the extraordinary situations affecting work performance may be ignored.

4. **Excessive Spending:**Some managers believe that all the funds that are allocated to their department need to be spent. It is believed that if they do not use as much as they are authorized to in the current budget, the funds budgeted for them in the next budget will be reduced. This leads to unnecessary wastage of funds and proves harmful to the company, affecting its profits.
5. **Scope for manipulation:**There is scope of manipulation in budgeting. The things can be exaggerated to window dress the things to get better appraisals.

Example: To reduce the budgeted revenue targets, a tactful manager may increase the estimates of cost. Whereas, in real time applications, the same manager may be doing less cost to increase the resultant revenue to finally show that his actual performance is more than the anticipated. Simply, there is ample scope for manipulation in the system of budgeting.

6. **Allocation of expenses:**The allocation of expenses is done by the top management and there may be biases in the allocated amounts to different departments.
7. **Financial Outcome Oriented:**The budgeting exercise is argued to be numbers-driven. It focuses on the quantitative aspect of the business for improving the company's profitability. Budgeting does not consider the subjective or qualitative aspects of a particular real time scenario.
8. **Conflicts in the Organization:**At times when a particular department is unable to meet the budgeted targets, they end up blaming the other department that provides services to it for not providing the necessary support. This tendency may give rise to defense mechanism and organizational conflict.

8.5 Types of Budgets

A robust budget framework is built around a master budget consisting of operating budgets, capital expenditure budgets, and cash budgets. The combined budgets generate a budgeted income statement, balance sheet, and cash flow statement. The following are the types of budgets:

1. Operating budget: Revenues and associated expenses in day-to-day operations are budgeted in detail and are divided into major categories such as revenues, salaries, benefits, and non-salary expenses. Operating budgets set the targets of operational results.

2. Capital budget: Capital budgets are typically requests for purchases of large assets such as property, equipment, or IT systems that create major demands on an organization's cash flow. The purposes of capital budgets are to allocate funds, control risks in decision-making and set priorities.

3. Cash budget: Cash budgets tie the other two budgets together and take into account the timing of payments and the timing of receipt of cash from revenues. Cash budgets help management track and manage the company's cash flow effectively by assessing whether additional capital is required, whether the company needs to raise money, or if there is excess capital

8.6 Preparation of Cash Budget, Flexible Budget, Sales Budget and Production Budget

1. **Preparation of Cash Budget:**A cash budget, also called a combined cash budget, is a financial planning tool that predicts when cash will come into and leave your business, usually on a monthly or quarterly basis.

The budget highlights areas where business might not have enough money to cover essential payments, such as employee wages, debt payments, and emergencies. It can also identify times when there might have been too much cash, a good problem to have.

All cash budgets follow the same formula:

Opening Cash Balance + Cash Inflow - Cash Outflow = Closing Cash Balance

Example:

Preparation of cash Budget				(INR)
		January	February	March
Opening Balance		12,000	13,100	13,400
Cash Receipts				
Sales		10,000	7,000	8,000
Interest		600	500	550
Total Receipts		**10,600**	**7,500**	**8,550**
Cash Payments				
Inventory Payments		5,000	4,000	4,500
Wages		3,000	2,000	2,500
Repairs		1,000	700	600
Rent		500	500	500
Income Tax		0	0	0
Total Payments		9,500	7,200	8,100
Net Cash Inflow(Outflows)		1,100	300	450
Closing Cash Balance		13,100	13,400	13,850
Target Cash Balance		15000	15000	15000
Cash Surplus (Deficit)		1,900	1,600	1,150

2. **Preparation of Flexible Budget**:Flexible budget is prepared for both types of cost, fixed and flexible.

1. Output is estimated.

2. Variable cost are estimated and accounted for.
3. Fixed cost are determined and taken into consideration.

Example:

Flexible Budget	Price per Unit	Quarter -1	Quarter -2	Quarter -3	Quarter -4
Units Sold		10	12	14	15
Sales Price		1,000	1,100	1,200	1,300
Sales -A		10000	13200	16800	19500
Direct Material	400	4000	4800	5600	6000
Direct Labour	250	2500	3000	3500	3750
Variable Manufacturing Overheads	50	500	600	700	750
Total Cost of Goods Sold-B		7000	8400	9800	10500
Gross Profit		3000	4800	7000	9000
Variable Sales Expenses	60	600	720	840	900
Fixed Sales Expense		400	400	400	400
Interest Expenses		0	0	0	25
Total Other Expenses-C		1000	1120	1240	1325
Total Expenses D=(B+C)		8000	9520	11040	11825
Net Profit(Loss)=A-D		2000	3680	5760	7675

3. **Preparation of Sales Budget:**Sales budget set the targets of sales to be made in the defined period. It takes into account forecasted units to be sold and such units are multiplied with the selling price to calculate the value of sales. From sales value there are done deductions in term of sales allowances and discounts.

Example:

ABC Company

Sales Budget for the Year Ended December 31, 20XX

	Quarter 1	Quarter 2	Quarter 3	Quarter 4

Forecasted unit sales	5,500	6,000	7,000	8,000
x Price per unit	$10	$10	$11	$11
Total gross sales	$55,000	$60,000	$77,000	$88,000
- Sales discounts & allowances	$1,100	$1,200	$1,540	$1,760
= Total net sales	$53,900	$58,800	$75,460	$86,240

4. **Preparation of Production Budget:**Production budget gives estimates of production to be done by the business in targeted period. It takes in account:
   - Opening balance of goods
   - Closing balance to be maintained
   - Sales forecast
   - Units to be produced

Equation=Opening Balance+ Production –Closing Stock=Sales Forecast

Example:

Sr. No	Particulars	Quarter 1	Quarter 2	Quarter 3	Quarter 4
A	Sales Unit Forecasted	$8,000	$9,000	$10,000	$11,000
B	Planned Ending Units of Inventory	$1,000	$1,000	$1,000	$1,000
C	Total Production Required (A+B)	$9,000	$10,000	$11,000	$12,000
D	Beginning Inventory of Finished Goods	$2,500	$1,000	$1,000	$1,000
E	Units to be Produced (C-D)	$6,500	$9,000	$10,000	$11,000

Quarter 1:

Hint:

Equation=Opening Balance+ Production –Closing Stock=Sales Forecast

(2500+Production-1000=8000

1500+Production=8000

Production=8000-1500

Production=6500)

8.7 Zero Base Budgeting

Zero Base Budgeting (ZBB) is an approach to make budgets taking base as zero. It means ignoring the past and starting with the present as new and first year.

Caution: Every year is New Year and there is no consideration to past years.

Zero Base Budgeting (ZBB) means, every budget is new and this feature differentiates it from the traditional or incremental budgeting, where all the past years are considered while making current budget.

In traditional budgeting or incremental budgeting the previous year is the base and accordingly the current budget is made taking previous year as base.

Zero Base Budget (ZBB) is also called 'budget starting from scratch'. This type of budgeting is done taking into account the efficiency or necessity rather than the budget history.

Management adds only essential expenses and no automatic inclusion of any of the expenses is done. In other words, there should be some reasons and justifications, as to why a particular expense has to be included in the current budget!

Zero-Based Budgeting vs. Traditional Budgeting

All the businesses of the World are innovating as to how a new thing can be done that too in a best way. The objective may be to lower the cost of production by being cost effective. It is therefore that the novel thoughts are to be coming and applied in the given situation.

In fact, traditional budgeting begins with the previous year's budget and usually implements incremental percentage increases or decreases to meet new goals. These percentages usually range anywhere from 1% to 10%.

Sometimes the things are not normal and due to such reasons it is not justified to go with the same set of allocations for making current budgets. The entire budget needs to be redone from scratch – hence, a zero-based budget.

In a zero-based budget, the company analyzes every expense/aspect of the business one by one. This is referred to as starting from a "zero base." While zero-based budgeting examines all expenses, traditional budgeting only examines proposed new expenses.

Advantages of Zero Base Budgets (ZBB):

- The corporate business plan or strategy is well aligned with the final output.
- More collaboration is coming due to the scenario of relating the new challenges with new allocations.
- Efficiencies and performances are considered and honored.
- Stereotype of traditional budgeting is broken paving way for cost reduction.

Disadvantages of Zero-based Budgeting(ZBB):

- Qualified persons are needed to implement the zero based budgeting.
- Existing set up challenged may distort corporate culture and adversely affect brand image.
- It is substantially more complex and tedious to start from a zero base. Traditional budgeting is much simpler, faster, and easier to implement.

Summary

Budgets are tactical operational plans. In budgeting the budgets are prepared and budgetary control is the system, when budgets are used for control purposes. Budgetary control is an exercise which every organization needs to do. It is synonymous with doing plans taking account of past for future preparedness.

Budgeting is definitely a standard process in which an attempt is made to do the allocations taking account of past performances and incorporating all the present applied conditions. The budgets are road maps which help in setting targets and attempting to achieve those set targets. The biggest problems in budgeting is that it is based on estimates and in times those estimated may be proving wrong and chance of manipulation become high.

Budgeting is part of behavioral science and there are chances of human error creeping in. Budgets can be made separately for every department and overall master budget is made to coordinate all the functional or departmental budgets.

Zero Base Budgeting (ZBB) is an attempt to overcome flaws of traditional or historical budgeting. The things are taken from the scratch level. In this type of budgeting there is no consideration to [past budgets and everything is taken as a new and there should be justifications as to why a particular item of revenue or expenses has to be taken in the current budget.

Keywords

- **Zero Based Budgeting:** Budgets made from scratch ignoring past allocations
- **Budgetary Control:** Using budgets for control
- **Master Budget:** A final budget made after taking all smaller budgets into account.
- **Operational Budget:** Budget taking note of normal operational expenses and revenue
- **Capital Budget:**Budget of long termexpenses.

Self Assessment

1. Budget is

A. An estimate
B. A projection
C. A forecast
D. A financial or non-financial future plan

2. Budgeting is the process of --------

A. Making budgets
B. Applying budgets for control purpose
C. Both A and B
D. None of the above

3. Budgetary control is the process of------------

A. Making budgets
B. Applying budgets for control purpose
C. Both A and B
D. None of the above

4. Budgetary control needs

A. Will of top management

B. Organisation readiness to work on budgets for control

C. Both A and B

D. None of the above

5. Production budget may have-------target.

A. Value

B. Quantity

C. Both A and B

D. None of the above

6. Flexible budget is having features:

A. Varying with production levels

B. Takes account of fixed costs

C. Takes account of variable costs

D. All of the above

7. Cost of inputs may be

A. Fixed

B. Variable

C. Semi Fixed

D. All of the above

8. Capital budget takes account of:

A. Fixed expenses

B. Revenue expenses

C. Both A and B

D. None of the above

9. Operational budget has not got in it:

A. Revenue expenses

B. Capital expenses

C. Revenue incomes

D. All of the above

10. The following is the limitation of budgeting:

A. Sets targets

B. Measures performance

C. Chance of error

D. D, None of the above

11. The advantages of budgeting:

A. Sets targets
B. Measures performance
C. Chance of error
D. Both A and B

12. Sales Budget is Equal to
A. Gross Sales less sales allowances
B. Gross Sales
C. Net Sales
D. Both A and C

13. Opening Stock –Closing Stock+ Production=
A. Opening Stock
B. Production
C. Closing Stock
D. Budgeted Sales Units

14. The advantages of zero base budgeting:
A. Considers efficiency
B. Ignores past inefficiencies
C. Maintains past stereotype
D. Only A and B

15. Zero Base Budgets do not take into account:
A. Past allocations
B. Only current needs
C. Efficient operations
D. Urgent needs only

Answer for Self Assessment

1.	A	2.	A	3.	B	4.	C	5.	C
6.	D	7.	D	8.	A	9.	B	10.	C
11.	D	12.	D	13.	D	14.	D	15.	A

Review Questions

1. What are the advantages and disadvantages of Zero Based Budgeting (ZBB)?
2. What is the difference between budgeting and budgetary control?
3. Differentiate between flexible budget and Zero Base Budget (ZBB)?
4. What is production budget? Discuss with example.

5. What are the advantages and limitations of budgeting?

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Unit 09: Absorption Costing and Marginal Costing

CONTENTS

Objectives

In this unit, student will be able to understand:

- meaning of Marginal Costing
- difference between Marginal Costing and Absorption Costing
- marginal cost equation
- Break Even Analysis(BEA)
- Cost Volume Profit (CVP) Analysis.
- Profit Volume Ratio(PVR)
- Profit Volume Ratio(PVR) Effects
- solve practical problems of Marginal Costing

Introduction

Costing of goods produced or services rendered by a business are a paramount necessity. It is very important that a business should be adopting a costing system which literally helps all the concerned, in taking correct decision as far a pricing of goods or service is concerned.

It is also worth noting that the production decisions like fixing the lot size etc. are to be optimized. The stock to be held in inventory of the business and costing of it is also a concern. To solve all there is need to select a right costing system.

There are two types of costing methods adopted by different businesses:

A. Absorption costing

B. Marginal costing

Absorption costing absorbs total cost amongst units produced whereas; marginal cost allocates cost but by segregating them into two types like; variable cost and fixed costs.

Interestingly in marginal costing the following classification of costs is considered:

A. Fixed Cost as Period Cost

B. Variable Cost as Product Cost

A. Fixed cost as period cost

In simple words, fixed costs remain constant and do not change with change in output. These mainly include overheads viz. factory,administration and selling and distribution. Hence such costs can be classified as period cost.

B. Variable Cost-Product Cost

The cost which changes with change in output level is called variable cost. It usually includes raw materials, labor and direct expense costs.

It is worthwhile to mention that the marginal costing takes into consideration change in total cost due to change in output. In other words, marginal costing takes account of only variable cost.

9.1 Meaning of Marginal Costing

Marginal means one.Marginal cost help in controlling the production or manufacturing cost.

It helps in optimizing the production and operations.

Caution: Tracking change in total cost, whenever there is change in one unit of output is the theme of marginal costing.

Example 1:

The total cost of manufacturing 10 units is 1, 00,000 and total cost when 11 units are manufactured is equal to 1, 08,000 and selling price of one unit is equal to 12,000.

The additional cost of making one unit= 8,000

The additional revenue from one unit= 12,000

It means that the company should go on manufacturing till that unit(better called LAST UNIT) when additional cost of manufacturing one unit EQUALS revenue from that unit.

Marginal Costing can estimate the desired output by understanding marginal and sales costs.

It simply works like this:

Sale or Unit price > Marginal cost = More production = Profit

Marginal cost > Sale or Unit price = Less production = Loss

Marginal Cost (MC) = (Change in Total Costs) / (Change in Quantity)

Or,

$MC = \Delta TC/\Delta Q$ – – – – – – – – – – – *Equation (I)*

Where,

TC = Total cost

Q = Quantity

Δ = Incremental change of producing one additional unit

Advantages of Marginal Costing

1. Classifies cost as fixed and variable

2. No overhead pricing included
3. Easy to ascertain cost
4. Easy cost comparison
5. Helps in decision making

Disadvantages of Marginal Costing

1. Efficiency and related factors ignored
2. Ignores time as a factor
3. Not suitable for all sectors

9.2 Difference between Marginal Costing and Absorption Costing

There are two types of approaches for valuing Inventory:

1. Marginal Costing
2. Absorption Costing

1. Meaning: Marginal Costing is decision making tool to find total cost of production by segregating total cost in to fixed cost and variable cost.

Absorption Costing is technique of finding total cost of production by apportioning total cost to cost centre.

2. Cost Recognition: In marginal costing variable cost is considered as product cost while fixed cost is considered as period cost.

In absorption costing both variable cost and fixed cost are considered as product cost.

3. Classification of Overheads: In marginal costing overheads are classified as fixed and variable

In absorption costing overheads are classified as Production, Administration and Selling & Distribution.

4. Profitability: In marginal costing profitability is measured by Profit Volume Ratio(PVR).

In absorption costing due to inclusion of fixed cost, profitability gets reduced.

5. Cost per unit: In marginal costing variances in opening and closing stock does not influence cost per unit.

In absorption costing variance in opening and closing stock affects the profitability.

6. Highlights: Marginal costing highlights contribution per unit.

Absorption costing highlights net profit per unit.

7. Cost Data: Marginal costing presents cost data to outline contribution per unit.

Absorption costing presents cost data in conventional way.

9.3 Marginal Cost Equation

Marginal cost is the cost of producing one additional unit.

Very interestingly, marginal cost is based on the consideration of variable cost of production.

Example 2:

Let us assume that the cost of producing 10 unit of truck tyre is 1, 80,000 and cost of producing 11 unit of truck tyre is 1, 96,000.

Find the marginal cost of production?

Solution:

Cost of producing 10 truck tyres= 1, 80,000/-

Cost of producing 11 truck tyres= 1, 96,000/-

PRODUCTION:

New Quantity-Old Quantity

=Change in Quantity (11 tyres-10 tyres) =1 Tyre

EXTRA COST ( ):

New Cost-Old Cost= 1, 96,000- 1, 80,000

= 16,000

Equation of Marginal Cost is change in total cost divided by change in units produced.

Or

Marginal Cost= Change in cost/Change in quantity

Marginal Cost=(1, 96,000- 1, 80,000)/(11Units-10Unit)

Marginal Cost= 16,000/1 Unit

Marginal Cost= 16,000

Example 3:

A pen manufacture has got cost of production of 1,000 pens at 1, 00,000 and cost of production of 2,000 pens will be 1, 25,000.

[So the marginal cost of manufacturing pen will be 25]

Current Unit of production =1,000

Current cost of production = 1, 00,000

Future Unit of production=2,000

Future cost of production= 1, 25,000

[Marginal cost = 25]

Marginal Cost= Change in Total Cost/Change in Quantity

Change in Total Cost

=(1, 25,000- 1, 00,000)= 25,000

Change in Quantity=(2,000-1,000)=1,000

Now,

Marginal Cost= 25,000/1,000= 25

Benefits:

1. It helps in understanding whether the Company should produce more units or not.
2. It helps in understanding the production level where there is maximum profits.
3. It helps in justifying the proposition that business should go on producing till the marginal revenue equals the marginal cost.
4. It serves as an alert as to why a business should not produce more after a particular level.
5. It helps in production optimization.
6. It finally helps top management in understanding what company paid for producing particular level of production.
7. It is a wonderful tool to relate cost of production of extra unit with extra revenue from additional unit to achieve business optimization.

9.4 Break Even Analysis(BEA)

Break Even Analysis is all about finding the business level where there is **"No Profit and No Loss".**

Break Even Analysis try to find the point in which total cost equals total revenue.

Break-even point analysis is used to find the total revenue or units needed to cover the total cost (fixed and variable both).

Break Even Analysis Formula:

1. Break Even Quantity=Fixed Cost/ (Sales Price per Unit-Variable Cost per Unit)

2. Break Even Value= Break Even Quantity X Selling Price per Unit

Break Even Quantity=FC/C

Where;

FC=Fixed Cost

C=Contribution per Unit

Break Even Value= Break Even Quantity X Selling Price per Unit

Example 4:

You are given the following information:

Selling Price per Unit= 15

Variable Cost per Unit= 5

Fixed Cost= 10,000

Find:

1. Break Even Point in Units?

2. Break Even Point in Value?

Selling Price per Unit= 15

Variable Cost per Unit= 5

Contribution per Unit (Unit Sales price –Unit Variable Cost) = 10

[Contribution per Unit =Selling Price per Unit-Variable Cost per Unit]

Break Even Point (BEP) Units =Fixed Cost/Contribution per Unit

Break Even Point (BEP) = 10,000/ 10

Break Even Point (BEP) =1,000 Units

Break Even Point in Value

= Break Even Quantity X Selling Price per Unit

Break Even Value=1,000 X 15

Break Even Value= 15,000

Justification of Answer No.1 and 2

Let us check how it is Break Even Point (BEP) with 1,000 Units?

Proof:

Sales value from 1,000 Units=1,000x15= 15,000

Variable Cost of 1,000 Units=1,000x5 = 5,000

Contribution= (Sales Price-Variable Cost) =Rs, 10,000

Less Fixed Cost = 10,000

Profit or Loss = ZERO

9.5 Cost Volume Profit(CVP)Analysis

- Cost-Volume-Profit (CVP) Analysis is also known as Break Even Analysis, looks to find the level of sales where there is no profit or no loss.
- Cost-Volume-Profit (CVP) Analysis is also used to find the level of sales volume needed for a desired profit.
- Cost –Volume- Profit (CVP) Analysis looks to find the relationship between volume of sales and cost for short term decisions.
- Cost –Volume- Profit (CVP) Analysis makes several assumptions, including that the sales price, variable cost and fixed cost per unit are constant.
- Running a CVP analysis involves using several equations for price, cost, and other variables, which it then plots out on an economic graph.

The CVP formula (to calculate the breakeven point).

Break Even Sales in Units=Fixed Cost/ Unit Contribution

[Unit Contribution= Selling Price per unit-Variable Cost per unit]

Cost –Volume- Profit (CVP) Analysis can also be used to find the level of sales needed for a target profit.

Formula:-

Desired Sales (Units) for target Profit

=(Fixed Cost+ Target Profit)/Contribution per Unit

Example 5:

It is given that:-

Selling Price per Unit= 100

Variable Cost per Unit= 60

Fixed Cost= 6,000

Find:

1. Break Even Sales in Units
2. Break Even Sales in Rupees
3. Sales in Units to earn 2,000 as Profit

Solution:

Selling Price/Unit= 100

Variable Cost/Unit= 60

Contribution/Unit= 40

Answer (1):

Break Even Point (Units) =Fixed Cost/Unit Contribution

Break Even Point (Units) = 6,000/40=150 Units

Justification of Answer No.1

Break Even Sales in Units=150

Proof:

Selling Price of 150 Units=150x 100= 15,000

Less Variable Cost of 150 Units=150x 60= 9,000

Contribution of 150 Units= 6,000

Fixed Cost= 6,000

Profit or (Loss) = ZERO

Answer (2):

Break Even Sales in

= Break Even Units X Selling Price per Unit

=150x 100= 15,000

Justification of Answer No.2

Break Even Sales = 15,000

Proof:

Proof:

Selling Price of 150 Units=150x 100= 15,000

Less Variable Cost of 150 Units=150x 60= 9,000

Contribution of 150 Units= 6,000

Fixed Cost= 6,000

Profit or(Loss) = ZERO

Answer (3):

Sales in Units to earn 2,000 as profit

Formula=

(Fixed Cost+ Desired Profit)/Unit Contribution

= (6,000+ 2,000)/ 40

= 8,000/40

=200 Units

Justification of Answer No.3

Sales in Units to earn 2,000 as profit=200 Units

Proof:

Selling Price of 200 Units=200x 100=	20,000
Less Variable Cost of 200 Units=200x 60=	12,000
Contribution of 200 Units=	8,000
Fixed Cost=	6,000
Profit or (Loss) =	2,000

9.6 Understand Profit Volume Ratio

Profit Volume Ratio(PVR) establishes a relationship between Unit Contribution (C) and Unit Sale Profit(S).

Profit Volume Ratio (PVR) formula:

Profit Volume Ratio (PVR)

=Unit Contribution(C)/Unit Selling Profit(S)

C= S-V

Where,

C=Contribution per Unit

S= Selling Profit per Unit

V= Variable Cost per Unit

Profit Volume Ratio helps in finding the Break Even Point Sales directly.

Formula for finding Break Even Point Sales:-

B.E.P Sales= Fixed Cost/Profit Volume Ratio(PVR)

Profit Volume Ratio also helps in finding the Margin of Safety(MOS).

Margin of Safety (MOS)

Margin of Safety(MOS) is the difference between Actual Sales and Break Even Sales.

Formula:

Margin of Safety= Actual Sales- Break Even Point Sales

9.7 Profit Volume Ratio(PVR) Effects

Profit Volume Ratio affects means to find the total change in the marginal costing equation when any of the variables is changed.

It is understood that:-

Marginal Costing equation = Sales-Variable Cost= Contribution---- (1)

If Profit:

Contribution= Fixed Cost+ Profits------- (2)

If Loss:

Contribution= Fixed Cost-Loss------ (3)

PVR=C/S--- (4)

For percentage:

PVR (%) =(C/S) X100

Where;

PVR=Profit Volume Ratio

C= Contribution

S= Sale Price

Example 6:

Below is the data given in normal situation and four situations are there whenever there is change in one variable to find the effects on PV Ratio:

Original	
Units	8000
Unit Selling Price(Rs.)	20
Unit Variable Cost(Rs.)	10
Total Fixed Cost(Rs.)	40,000
Unit Contribution=(Unit Sales Price-Unit Variable Cost)	
(Rs.20-Rs.10)	Rs.10
(1)PV Ratio(Unit Contribution/Unit Sales Price)x100	
[(10/20)x100]	50%
(2)Break Even Point=Fixed Cost/PV Ratio= Rs.40000/50%	Rs.80,000
(3)Margin of Safety= Total Sales-Break Even Point Sales	
[8000x20=160000-80,000=80000]	Rs.80,000

A.10% Increase in Unit Selling Price	
Units	8000
Unit Selling Price(Rs.)	22
Unit Variable Cost(Rs.)	10
Total Fixed Cost(Rs.)	40000
Unit Contribution=(Unit Sales Price-Unit Variable Cost)	
(Rs.22-Rs.10)	Rs.12
(1)PV Ratio(Unit Contribution/Unit Sales Price)x100	
[(12/22)x100]	54.55%
(2)Break Even Point=Fixed Cost/PV Ratio= Rs.40000/54.55%	Rs.73,327
(3)Margin of Safety= Total Sales-Break Even Point Sales	
8000x22=176000-73327=	Rs.1,02,673

B.10% Increase in Unit Variable Cost	
Units	8000
Unit Selling Price(Rs.)	20
Unit Variable Cost(Rs.)	11
Total Fixed Cost(Rs.)	40000
Unit Contribution=(Unit Sales Price-Unit Variable Cost)	
(Rs.20-Rs.11)	Rs.9
(1)PV Ratio(Unit Contribution/Unit Sales Price)x100	
[(9/20)x100]	45%
(2)Break Even Point=Fixed Cost/PV Ratio= Rs.40000/45%	Rs.88,889
(3)Margin of Safety= Total Sales-Break Even Point Sales	Rs.71,111
[8000x20=160000-88889]=Rs.71,111	

C.10% Increase in Fixed Cost	
Units	8000
Unit Selling Price(Rs.)	20
Unit Variable Cost(Rs.)	10
Total Fixed Cost(Rs.)	44000
Unit Contribution=(Unit Sales Price-Unit Variable Cost)	
(Rs.20-Rs.10)	Rs.10
(1)PV Ratio(Unit Contribution/Unit Sales Price)x100	
[(10/20)x100]	50%
(2)Break Even Point=Fixed Cost/PV Ratio= Rs.44000/50%	Rs.88,000
(3)Margin of Safety= Total Sales-Break Even Point Sales	Rs.72,000
8000x20=160000-88,000=72000	

D.10% Increase in Unit Sold	
Units	8800
Unit Selling Price(Rs.)	20
Unit Variable Cost(Rs.)	10
Total Fixed Cost(Rs.)	40000
Unit Contribution=(Unit Sales Price-Unit Variable Cost)	Rs.10
(Rs.20-Rs.10)	
(1)PV Ratio(Unit Contribution/Unit Sales Price)x100	50%
[(10/20)x100]	
(2)Break Even Point=Fixed Cost/PV Ratio= Rs.40000/50%	Rs.80,000
(3)Margin of Safety= Total Sales-Break Even Point Sales	Rs.96,000
8800x20=176000-80,000=96000	

9.8 Practical problems of Profit Volume Ratio(PVR)

Problem-1

Profit Volume Ratio (PVR):

Problems on marginal costing:

The following data is given:

Fixed cost = 12,000

Selling Price = 12 per unit

Variable cost= 9 per unit

i) What will be the profit when sales are:

a) 60,000

b) 1, 00,000?

ii) What will be the amount of sales at desired level to earn a profit of c) 6,000; d) 15,000?

Solution:

P/ V Ratio = Contribution /Sales = 3/ 12 = 25%

a) When Sales= 60,000

Contribution = Sales × P/ V Ratio = 60,000×25%= 15,000

$Profit = Contribution - FixedCost =$ 15000 − 12,000

= 3,000

b) When Sales = 1, 00,000

Contribution = 1, 00,000 × 25% = 25,000

Profit= Contribution-Fixed Cost

Profit = 25,000 − 12,000 = 13,000

c) Sales for desired Profit

=(Fixed Cost+ Desired Profit)/ Profit Volume Ratio

Sales for desired Profit

= 12,000 + 6,000/ 25%

= 72,000

d) Sales for desired Profit

Sales for desired Profit

= (Fixed Cost+ Desired Profit)/PVR

= 12,000+ 15,000/25% = 1, 08,000

Problem-2

Given:

Break Even Point = 30,000

Profit = 1,500

Fixed Cost = 6,000

What is the amount of variable cost?

Solution:

Break Even Point= Fixed Cost/PVR

Putting Value

30,000= 6,000/PVR

PVR= 6,000/ 30,000

PVR %=(6,000/ 30,000) X100

PVR%=20%

Now PVR=20%

It means Contribution/Sales=20%

Because,

[PVR=(Contribution/Sales) X100]

It also means that Variable Cost is 80%

Also,

1-Contribution= Variable Cost

=1-20%=80%

In Break Even Sales of .30, 000

Variable Cost= 24,000

[Because 80% of 30,000= 24,000]

Problem-3

Sales=4000 *units* @ □10 *perunit*

Break− evenpoint=1,500 *units*

FixedCost=□3,000

What is the amount of a) variable cost and b) profit?

Break Even Point (Units)

= Fixed Cost/ Unit Contribution

1,500= 3,000/Unit Contribution

Unit Contribution= 3,000/1,500

Unit Contribution= 2

Variable Cost?

Unit Sales Price- Unit Contribution=Unit Variable Cost

Because

[SP-VC=C]

Where

SP= Unit Sales Price

VC=Unit Variable Cost

C=Unit Contribution

Unit Variable Cost= 10- 2= 8

Profit When Units Sold is 4,000

Sales Value=4,000X10= 40,000

Variable Cost=4,000x8= 32,000

Contribution=4,000x2= 8,000

Less Fixed Cost = 3,000

Profit = 5,000

Problem-4

Given:

Fixed cost 8,000

Profit earned 2,000

Break even sales 40,000

What are the actual sales?

Break Even Sales ( ) = Fixed Cost/PVR

40,000= 8,000/PVR

PVR= 8,000/ 40,000

PVR= (8,000/ 40,000)

PVR= (8,000/ 40,000)

PVR=1/5

PVR %=(1/5) X100=20%

Actual Sales when Fixed Cost 8000 and Profit is 2,000:

Actual Sales= (Fixed Cost +Profit)/PVR

Actual Sales= (8,000 + 2,000)/20%

Actual Sales= (10,000/20) x100

Actual Sales= 50,000

Problem No.-5

Selling price 150 per unit; Variable cost 90 per unit; Fixed cost 6,00,000

(A)What is the break-even point?

(B)What is the selling price per unit if break-even point is 12000 units?

Solution:

(A) Break−even point= Fixed cost/Unit Contribution

= 6, 00,000/ (150− 90)

= 6, 00,000/ 60

=10,000 Units

(B) Selling Price when break-even point is 12000 units, contribution is calculated as under:

BEP (Units) =Fixed Cost/ Unit Contribution – (1)

By putting value in (1)

12,000= 6, 00,000 / Unit Contribution

Contribution= 6, 00,000/12,000 units= 50

Contribution =Sales-Variable Cost

50=Sales− 90

Sales= 50+ 90

Sales= 140

Thus, selling price is 140 when break- even point is 12,000 units.

Problem No.-6

The following information is given: Sales = 2, 00,000; variable cost= 1, 20,000; Fixed cost = 30,000

Calculate

a) Break-Even Point

b) New break-even point if selling price is reduced by 10%

c) New break-even point if variable cost increases by 10%

d) New break-even point if fixed cost increases by 10%

Solution:

Profit Volume Ratio= $(Sales - Variable\ Cost)/Sales$

=(2, 00,000− 1, 20,000)/ 2, 00,000

= 80,000/ 2, 00,000×100=40%

a) Break Even Point

BEP=Fixed Cost/ PVR

= 30,000/40%= 75,000

(b) New break-even point if selling price is reduced by 10%

When selling price is reduced by 10%

New Sales= 2, 00,000-10% of 2, 00,000= 1, 80,000

New Profit volume ratio= (1, 80,000− 1, 20,000)/ 1, 80,000 = 60,000/ 1, 80,000=1/3

New Break−even point= Fixed Cost / $Profitvolumeratio=$ 30,000/33.33%= 90,000

c) When variable cost increases 10%,

New variable cost= 1, 20,000 + 10% 1, 20,000 of = 1, 32,000

New Profit Volume Ratio= (2,00,000− 1,32,000)/ 2,00,000 =(68,000/ 2,00,000)×100=34%

New Break−even point= 30,000/34%

= 88,235$(Approx)$

d) If fixed cost increases by 10%,

New Fixed Cost = 30,000 + 10% of 30,000 = 33,000

Profit volume ratio remains unaffected at 40%

New Break−even point= 33,000/40%= 82,500

Problem No.-7

From the following particulars, find out the selling price per unit. if break-even point is to be brought down to 9,000 units:

Variable cost per unit= 75

Fixed expenses= 2, 70,000

Selling price per unit= 100

Unit Selling Price= 100

Unit Variable Cost= 75

Unit Contribution= 25

Fixed expenses= 2, 70,000

Break Even Point (Units) = 2, 70,000/ 25

=10,800 Units

If break-even point is to be brought down to 9,000 units:

New Break Even Point (Units)

= Fixed Cost/ Unit Contribution

9,000= 2, 70,000/ Unit Contribution

Unit Contribution= 2, 70,000/ 9,000= 30

Unit Contribution = 30

Unit Variable Cost= 75

Unit Selling Price=?

Unit Selling Price-Unit Variable Cost= Unit Contribution

SP- 75= 30

SP= 30+ 75

SP= 105

It means selling price has to be increased by 5 to bring break-even point to 9000 units.

Problem No.-8

A company has fixed expenses of 90,000 with sales at 3, 00,000 and a profit of 60,000.

(a)Calculate the profit volume ratio.

(b)If in the next period the company suffered a loss of 30,000, calculate the sales volume.

(c) What is the margin of safety for a profit of 60,000 in (a) above?

(a)Calculate the profit volume ratio:

Given:

Fixed Expenses= 90,000

Sales= 3, 00,000

Profit = 60,000

PV Ratio= (Contribution/Sales) x100

Sales-Variable Cost= Contribution--- (1)

Or

If profits;

Sales-Variable Cost=Fixed Cost + Profit--- (2)

Or

If loss;

Sales-Variable Cost= Fixed Cost-Loss--- (3)

By putting value in Equation No.2

Sales-Variable Cost=Fixed Cost + Profit--- (2)

3, 00,000-Variable Cost= 90,000+ 60,000

3, 00,000-Variable Cost= 1, 50,000

3, 00,000- 1, 50,000=Variable Cost

Variable Cost= 1, 50,000

In sales of 3, 00,000 variable cost = 1, 50,000

It means variable cost=50% of sales

[(150000/ 300000) x100]

PV Ratio= (Contribution/Sales) x100

PV Ratio= (1, 50,000/ 3, 00,000) x100

PV Ratio=50%

(b)If in the next period the company suffered a loss of 30,000, calculate the sales volume.

If loss;

Sales-Variable Cost= Fixed Cost-Loss--- (3)

Sales-50% of Sales= 90,000- 30,000

Sales-50% of Sales= 60,000

Sales/1-1/2 Sales= 60,000

Sales/1-Sales/2= 60,000

(2Sales-1Sales)/2= 60,000

1 Sales= 60,000x2

Sales= □1, 20,000

Or Second Solution

Int□enextperiod, contribution=*Fixedcost−Loss* =□90,000− 30,000= 60,000

PV Ratio=Contribution/Sales

50%= (60,000/Sales)

Sales= 60,000/ 50%= 1, 20,000

(c) What is the margin of safety for a profit of 60,000 in (a) above?

Margin of Safety= Actual Sales-Break Even Point Sales

For profit of 60,000 Actual Sales are

3, 00,000 [Given in (a)]

Break Even Point Sales= Fixed Cost/PVR---- (4)

By putting value in Equation (4)

Break Even Point Sales= 90,000/50%

Break Even Point Sales= 1, 80,000

Margin of Safety= Actual Sales- Break Even Sales

Margin of Safety= 3, 00,000- 1, 80,000

Margin of Safety= 1,20,000

If margin of safety is 2, 40,000 (40% of sales) and profit volume ratio is 30% of XY Limited, calculate its i) Break-even point and

ii) Amount of profit on sales of 9, 00,000.

Problem No.-9

i) Break Even Point

Solution:

Given,

Margin of Safety=40% of sales= 2, 40,000

It means 100% of Sales= (2, 40,000/40%) x100%

Total Sales= 6, 00,000

It is given that margin of safety @40% of Sales

= 2, 40,000

Margin of Safety= Actual Sales- Break Even Sales

Break Even Sales= Actual sales-Margin of Safety

Break Even Sales=100%-40%=60%

It means Break Even Sales =60%(100%-40%)

= 3,60,000

[60% of 6, 00,000= 3, 60,000]

ii) Amount of profit on sales of , 900,000.

Break Even Sales= 3, 60,000

PVR=30%

Contribution=30%= 1, 08,000 and it is equal to fixed cost (1, 08,000).

In sale of 9, 00,000

Contribution=30%= 2.70,000

Profit= Contribution-Fixed Cost

Profit= 2, 70,000- 1, 08,000= 1, 62,000

Problem No.-10

X limited has earned a contribution of 2, 00,000 and net profit of 1, 50,000 on sales of 8, 00,000. What is its margin of safety?

Given Sales= 8, 00,000

Contribution= 2.00,000

Net Profit= 1, 50,000

Fixed Cost= 50,000(Balancing Figure)

[Contribution-Profit=Fixed Cost]

Margin of Safety= Actual Sales-Break Even Sales

Or

Margin of Safety=Profit/PVR

PVR=Contribution/Sales

PVR= (2, 00,000/ 8, 00,000) X100=25%

Break Even Sales= 50,000/25%

Break Even Sales= 2, 00,000

Margin of Safety= Actual Sales-Break Even Sales

Margin of Safety= 8, 00,000- 2, 00,000= 6, 00,000

Alternative Solution:

Margin of Safety=Profit/PVR

Break Even Sales= 1, 50,000/25%

Break Even Sales= 6, 00,000

Problem No.-11

The ratio of variable cost to sales is 70%. The break-even point occurs at 60% of the capacity sales.

Find the capacity sales when fixed costs are 90,000. Also compute profit at 75% of the capacity sales.

PVR=30%

Fixed Cost= 90,000

Break Even Point=Fixed Cost/PVR

Break Even Point= 90,000/30%= 3, 00,000=60% of Capacity Sales (Given).

Capacity Sales= 60%= 3, 00,000

1%= 3, 00,000/60%

100 %=(3, 00,000/60%) x100

Capacity Sales= 5, 00,000

Profits @75% of Capacity

75% of 5, 00,000= 3, 75,000

PVR=30%

It means contribution = 3, 75,000x30%= 1, 12,500

Fixed Cost= 90000

Profit=Contribution-Fixed Cost= 1, 12,500- 90,000=

22,500

Summary

There are two types of costing systems to find the value of goods or service produced and also the value of stock held as inventory. The first system of costing is called the absorption costing and second is called the marginal costing. In absorption costing the total cost viz. variable cost and fixed cost is allocated amongst the units produced. Whereas in marginal costing only the variable cost is allocated amongst the units produced and the fixed cost is treated as period/time cost and is charged later on. In other words, marginal costing treat the variable cost as product cost and fixed cost is treated as period cost. Marginal costing has got the equation:

Marginal Costing equation = Sales-Variable Cost= Contribution---- (1)

Break-even point (BEP) is the point where there is ‘no profit no loss’ and at break-even point the Contribution =Fixed Cost.

Profit Volume Ratio (PVR) is one of the important ratios in marginal costing. The formula for this ratio is:

Profit Volume Ratio (%) = (Contribution/Sales) x100

Keywords

Marginal Cost: Cost of producing one extra unit.

Absorption Costing: Allocating total cost amongst units produced.

Break Even Point Units: Contribution divided by Unit contribution.

Break Even Point : Contribution divided by PV Ratio

PV Ratio: Unit Contribution divided by Unit Selling Price

Self Assessment

1. Marginal Cost is:

A. Cost of producing extra one Unit

B. Variable Cost

C. Fixed Cost

D. All of the above

2. Break-even point is:

A. Profit zone

B. Loss Zone

C. No profit- no loss zone

D. None of the above

3. Given; PV Ratio=15%; Contribution= 15,000; Variable Cost=?

A. 1, 00,000

B. 75,000

C. 25,000

D. 85,000

4. Margin of Safety= 25,000; Break Even sales= 50,000; what is the actual sales?

A. 75,000

B. 50,000

C. 25,000

D. None of the above.

5. Sales= 1, 00,000; Variable Cost= 30,000; Loss= 55,000

Find the fixed cost?

A. 10,000

B. 1, 05,000

C. 1, 25,000

D. 1, 52,000

6.Formula for calculating Break Even Point in Units is:

A. Fixed Cost

B. Fixed Cost/PV Ratio

C. Fixed Cost/ Unit Contribution

D. Fixed Cost-Variable Cost

7.Formula for calculating Break Even Point in Value is:

A. Fixed Cost

B. Fixed Cost/PV Ratio

C. Fixed Cost/ Unit Contribution

D. Fixed Cost-Variable Cost

8.Absorption Cost considers:

A. Variable cost

B. Fixed Cost

C. Total Cost

D. None of the Above

9.Opening stock and closing stock are more affected in

A. Marginal Costing

B. Absorption Costing

C. Both A and B

D. None of the above

10. If actual sales is 1,25,000 and margin of safety is 80,000 then break even sales( ) is:

A. 1,25,000

B. 80,000

C. 45,000

D. 22,000

11. Given:

Case-1 Case-2

Sales= 20,000 Sales= 30,000

Profits= 5,000 Profit= 12,000

Find fixed cost?

A. 8,000

B. 9,000

C. 10,000

D. 7,000

12. Given:

Case-1 Case-2

Sales= 20,000 Sales= 30,000

Profits= 5,000 Profit= 12,000

Find Break Even sales point?

A. 8,857

B. 12,000

C. 12,857

D. 9,000

13. Given:

Case-1 Case-2

Sales= 20,000 Sales= 30,000

Profits= 5,000 Profit= 12,000

Find PV Ratio?

A. 30%

B. 30

C. 70%

D. 70

14. Which of the following is correct:

A. Sales-Variable Cost= Contribution

B. Sales-Variable Cost= Fixed Cost+ Profit

C. Sales-Variable Cost= Fixed Cost-Loss

D. All of the above

15. If PV Ratio=60% and variable cost = 30,000

Find the Sales value?

A. 75,000

B. 65,000

C. 1,00,000

D. 60,000

Answer for Self Assessment

1.	A	2.	C	3.	D	4.	A	5.	C
6.	C	7.	B	8.	C	9.	B	10.	C
11.	B	12.	C	13.	C	14.	D	15.	A

Review Questions

1. What is marginal costing? What are the features of marginal costing?
2. Differentiate between marginal costing and absorption costing?
3. What are the advantages and limitations of marginal costing?
4. What is Cost Volume Profit (CVP) analysis?
5. Given: PV Ratio=30%, Break Even Sales= 60000 Find;
    1. Rupees variable Cost
    2. Rupees fixed Cost

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Unit 10: Decision Making

CONTENTS

Objectives

In this unit, student will be able to understand:

- Meaning of decision making andsteps in decision making process.
- Meaning of relevant costs and benefit andtypes of 'Relevant Cost Decisions'.
- Meaning of 'Short Term Decisions' and situations.
- Pricing decisions: Major factors influencing pricing decisions, various methods of pricing

Introduction

Decision making is the art and science of making the right decision. The decision has to be in a way that is perfect. Simply, it means the all the pros and cons are to be well evaluated before selecting a particular course of action.

In the field of management accounting there comes a time, when the business has to cope- up with the contingencies emerging in the domain of production,which essentially affects the cost and revenues of the business. The situations can be like:

Make or buy, profitable product mix, acceptance, or rejection of special / export offers, make or buy, addition or elimination of a product line, sell or process further, operate or shut down. Importantly, the one of the essential pricing theories is the theory of cost-plus profit. It means that the price tag of the product or service is coming itself from the costing system of the business, which is very part the internal environment of the business. The general rule is that "One cannot copy a neighbor's price tag".

It is the cost of manufacturing that has to be marked up with certain percentage of revenues to fix the final selling price.

10.1 Decision

Decision is a conclusion or resolution reached after due consideration.

10.2 Decision Making

Meaning of Decision Making:Decision-making is the process of making choicesby identifying a decision, gathering information, and assessing alternative resolutions.

Steps in Decision Making

Steps in decision making means the process followed to take a right decision.

Step by step approach followed helps the decision taker in ensuring that:

a. Detailed information is gathered about alternatives available.
b. Every alternative is duly considered.
c. No source is left as far as consideration of alternatives is concerned.

There are seven steps followed in decision making:

Step 1: Identify the decision

Step 2: Gather relevant information

Step 3: Identify the alternatives

Step 4: Weigh the evidence

Step 5: Choose among alternatives

Step 6: Take action

Step 7: Review your decision & its consequences

Step 1: Identify the decision:

This step is very important and in this step it is pondered over that:

a. Decision has to be taken
b. Nature of the decision to be taken.

Step 2: Gather relevant information:

For taking a piece of correct information, there is a need to collect relevant detailed information.

The information can be from both internal and external sources.

Step 3: Identify the alternatives:

After gathering detailed information from various sources, there might come up alternatives or paths to resolve the problem in step 1.

A detailed list is prepared for all the available or emerged alternatives.

Step 4: Weigh the evidence:

The outcome of each alternative is evaluated to check the consequences.

It is just like rehearsing what it would be like if each of the alternatives is carried out to the end Detailed applicability of every alternative is assessed as per the need of the decision step 1.

Definitely, there erupts beginning of favorites for alternatives.

Then there is done favorite priority ranking for each alternative considered.

Step 5: Choose among alternatives:

Once the weighing of evidence is done, there is a choice to be made among the alternative as per allocated rank as per step 4.

Step 6:Take action:

After choosing the best alternative, action has to be taken to implement the best-selected alternative (as per step 5).

Step 7: Review your decision & its consequences:

This is the final step, and the outcomes of the decision are assessed and mapped to check if the problem (as per step 1) is fully resolved or not. If the problem is resolved, then it is perfectly okay otherwise, there is a need to repeat some of the steps like:Again gathering information, re-exploring or re-innovating more alternatives to correct the challenge or problem in step 1.

10.3 Meaning of Relevant Cost

Relevant cost is a term used in management accounting.Relevant cost is a cost incurred when making specific business decisions.Relevant costs are avoidable as they are specific business decision costs.

Relevant cost is considered to determine:

a. whether to sell or keep a business unit
b. whether to make or buy parts or labor, and
c. Whetherto accept a customer's last-minute or special orders.

The opposite of a relevant cost is a sunk cost, which has already been incurred regardless of the outcome of the current decision.

Assume, for example; a passenger rushes up to the ticket counter to purchase a ticket for a flight that is leaving in 25 minutes. The airline needs to consider the relevant costs to make a decision about the ticket price.

Almost all of the costs related to adding the extra passenger have already been incurred, including the plane fuel, airport gate fee, and the salary and benefits for the entire plane’s crew. Because these costs have already been incurred, they are "sunk costs" or irrelevant costs.

The only additional cost is the labor to load the passenger’s luggage and any food that is served mid-flight, so the airline bases the last-minute ticket pricing decision on just a few small costs.

Types of Relevant Cost Decisions*:*

1.Continue Operating vs. Closing Business Units

A big decision for a manager is whether to close a business unit or continue to operate it, and relevant costs are the basis for the decision.

Assume, for example, a chain of retail sporting goods stores is considering closing a group of stores catering to the outdoor sports market. The relevant costs are the costs that can be eliminated due to the closure and the revenue lost when the stores are closed. If the costs to be eliminated are greater than the revenue lost, the outdoor stores should be closed.

2. Make vs. Buy

Make vs. buy decisions are often an issue for a company that requires component parts to create a finished product.

For example, a furniture manufacturer is considering an outside vendor to assemble and stain wood cabinets, which would then be finished in-house by adding handles and other details.

The relevant costs in this decision are the variable costs incurred by the manufacturer to make the wood cabinets and the price paid to the outside vendor.

The furniture manufacturer outsources the work if the vendor can provide the component part at a lower cost.

3. Factoring in a Special Order

A special order occurs when a customer places an order near the end of the month, and prior sales have already covered the fixed cost of production for the month.

If a client wants a price quote for special order, management only considers the variable costs to produce the goods, specifically material and labor costs.

10.4 Meaning of Short-Term Decisions

Short Term Decisions are the decisions taken by a business for less than one year.Whereas, long term decisions are pertaining to a period of a year or more.

The situations of long-term or short-term decisions are very important and have different implications in management accounting.

As far as short-term decisions are concerned, management accounting principles are applied there to find the optimizations.

The following is one of the important cost and revenue classifications to be understood to understand the marginal costing:

1. Irrelevantcosts (Also called Sunk Costs) and revenues

2. Relevant Costs and revenues

Relevant costs and revenues are costs and revenues that are specific to a particular decision.

They are future costs and revenues that change depending on the decision taken.

If there are a number of alternative courses of action, relevant costs and revenues will differ between alternatives.

Relevant costs and revenues are also called avoidable costs and revenues.

Whereas, Irrelevant *costs (a sunk cost) and* revenues are not specific to a particular decision; they do not differ between alternatives and may relate to the past.

Costs RELEVANT to a decision are often described as:

- Incremental
- Additional
- Escapable
- Avoidable
- Opportunity costs

Costs IRRELEVANT to a decision are often described as:

- Costs paid in the past
- Costs committed to in the past
- Unescapable
- Unavoidable
- Non-cash costs (e.g. depreciation)
- Allocated

Only relevant costs and revenues should be considered when faced with a short-term decision.

In other words, sunk costs should be identified and excluded from the analysis.

Qualitative factors:

It is not only that quantitative factors namely cost and revenues are to be considered but due care has to be given to concerned qualitative factors.

Qualitative factors may include issues such as the effect that a decision may have:-

1. On product or service quality;

2. on the morale of the workforce;

3.The reliability of the supplier to deliver goods/services on time;

4.The effect on any existing customers; and

5. The effect of the decision on the reputation of the business.

Full consideration should be given to both quantitative and qualitative factors in any decision-making situation.

Various Short Term Decisions Situations:

1.Profitable product mix,

2.Acceptance or Rejection of special / export offer,

3.Make or buy,

10.5 Short-Term Decision-MakingSituations – Profitable Product Mix

Short term decision- making situations – profitable product mix:Normally, a business concern will select the product mix which gives the maximum profit.

Product mix is the ratio in which various products are produced and sold.

The marginal costing technique helps management make appropriate decisions regarding the product mix, i.e., changing the ratio of product mix to maximize profits.

The technique not only helps in dropping unprofitable products from the mix but also helps in dropping unprofitable departments, activities, etc.

Example:

Suppose a factory can manufacture four products, namely,

A,B,C,D and contribution from Product A=$40,Product B=$20,Product C=$50 and Product D=$60 and2,1,3&4hours are respectively needed hours for manufacturing products A,B,C & D. Also there is a constraint of machine-hours limit=1000 hours.

You need to tell the best product mix for the factory:-

A)If machine hour constraint is considered?

B)If machine hour is not the constraint?

Solution:A) If machine hour constraint is considered

Product	Contribution($)	Hours Needed	Contribution($) /Hour	Machine Hours	Total Contribution($)	Rank
A	40	2	20.00	1000	20000.00	11
B	20	1	20.00	1000	20000.00	1
C	50	3	16.67	1000	16666.67	111
D	60	4	15	1000	15000.00	1V

B)If machine hour is not the constraint then the firm would like to produce the products according to maximum contribution/Unit Viz.:-

Product D $60/Unit

Product C $50/Unit

Product A $40/Unit

Product B $20/Unit

10.6 Acceptance or Rejection of special / export offers

There are times when a customer places a special order for a large volume at lower prices than that usually charged by the business.

In this event, the business should properly decide whether to accept or reject the special order.

When the company is operating at less than its maximum capacity and the company has enough capacity to produce and fill the special order, the order should be accepted if the additional sales exceed the additional variable costs.

When the company has no excess capacity, the cost to be considered must include the lost contribution margin from sacrificing regular sales to be able to fill up the special order.

Example:

With Excess Capacity

In a month, ABC Company normally produces and sells 8,000 units of its product for $20. Variable manufacturing cost per unit is $10.

Total fixed manufacturing costs (up to the maximum capacity of 10,000 units) are $38,000.

Variable operating cost is $1 per unit and fixed operating costs total $10,000.

A customer placed a special order for 1,500 units for $15 each. The customer is willing to shoulder the delivery costs; hence the business will not incur additional variable operating costs.

Should the company accept or reject the special order?

Solution:

The company has 2,000 units excess capacity to fill up the special order of 1,500 units.

The only costs to be considered in this case are the variable manufacturing costs. The total fixed cost is the same regardless of the level of activity.

Even if an additional 1,500 units are to be produced, the total fixed cost remains the same. In addition, both parties agreed that the company will not incur in additional variable operating costs.

Should the company accept the offer? Yes. The selling price of $15 exceeds the variable manufacturing cost of $10. This will result in additional income of $7,500 (1,500 x $5).

		With Excess Capacity			
	Amount in ($)		Without Special Offer		With SpeciaL Offer
	Sales	8000 Units@20	160000	8000 Units@20/Unit 1500 Units@15/Unit	182500
	Less Variable Cost				
	Var. Mfr. Cost	8000 Units@10	80000	9500 Units@10	95000
	Var.Operting	8000 Units@1	8000	No change	8000
	Cont. Margin		72000		79500
	Less: Fixed Cost				
	Fixed Mfr.		38000		38000
	Fixed Operating		10000		10000
	Operaing Income		24000		31500

Example:

Without Excess Capacity

Using the same information in the above scenario but this time, assume that the company normally manufactures and sells 9,000 units instead of 8,000. Should the company accept the special order?

Solution:

Since the company has excess capacity of 1,000 units only, it is not enough to fill up the special order of 1,500 units. Hence, a portion of the regular sales (500 units) must be sacrificed to fill up the entire special order.

The lost contribution margin should be considered. Contribution margin is equal to sales (at $20) minus variable costs ($10 variable manufacturing plus $1 variable operating).

Lost contribution margin = ($20 - $11) x 500 units = $4,500

The lost contribution margin is allocated over the items sold through the special order.

Lost contribution margin per unit = $4,500 / 1,500 units = $3

This cost is an additional consideration in the decision. Should the company accept the offer?

The answer is still yes since the selling price ($15) is higher than the cost ($13, i.e. variable manufacturing cost per unit of $10 plus lost CM per unit of $3).

This will result in additional income of $3,000 (1,500 x $2).

	Without Excess Capacity			
Amount in ($)		Without Special Offer		With SpeciaL Offer
Sales	9000 units@20/Unit	180000	8500 Units@20/Unit 1500 Units@15/Unit	192500
Less Variable Cost				
Var. Mfr. Cost	9000 Units@10	90000	10000 Units@10	100000
Var.Operting	9000 Units@1	9000	For Normal	8500
Cont. Margin		81000		84000
Less: Fixed Cost				
Fixed Mfr.		38000		38000
Fixed Operating		10000		10000
Operaing Income		33000		36000

10.7 What is a Make-or-Buy Decision?

A make-or-buy decision is an act of choosing between manufacturing a product in-house or purchasing it from an external supplier.

Also referred to as an outsourcing decision,

a make-or-buy decision compares the costs and benefits associated with producing a necessary good or service internally to the costs and benefits involved in hiring an outside supplier for the resources in question.

To compare costs accurately, a company must consider all aspects regarding the acquisition and storage of the items versus creating the items in-house, which may require the purchase of new equipment, as well as storage costs.

What Is a Make Decision?

Regarding in-house production, a business must include expenses related:-

1. To the purchase and maintenance of any production equipment
2. The cost of production materials.
3. The additional labor required to produce the items,
4. Storage requirements within the facility
5. The proper disposal of any remnants or byproducts from the production process

Reasons for making:

1. Idle production capacity
2. Better quality control
3. Proprietary technology that needs to be protected
4. Reliability of suppliers
5. Future prospects/economies of scale
6. Trusted supplier shutting down
7. Restructuring the core business

The quantitative analysis should support the option that is more cost-effective.

At times, the qualitative analysis addresses any concerns a company cannot measure specifically.

What Is a Buy Decision?

Factors that may influence a firm's decision to buy a part rather than produce it internally include:

1. A lack of in-house expertise,
2. Small volume requirements,
3. A desire for multiple sourcing and relationship management.
4. The fact that the item may not be critical to the firm's strategy.
5. Opportunity to work with a company that has previously provided outsourced services successfully
6. Sustaining a long-term relationship.

Make of Buy:

Option-1		Cost Head	Cost Per Unit($)
Buy:		Cost of Part	20
		Shipping &Warehousing	3
		Total Cost	**23**
Option-2		**Cost Head**	**Cost Per Unit($)**
Make:		Direct Cost	15
		Fixed Overhead	4
		Variable Overhead	7
		Total Cost	**26**

Solution:

The solution can be given in two different situations:

Case 1: When there is idle capacity

Case 2: When there is no room/ idle capacity

Case 1: When there is idle capacity

Buying Cost = $ 23/Unit and

Making Cost (Only variable cost considered)

=($15+$7) =$22/Unit

Hence business should MAKE the Units rather than BUYING.

Reason: There is saving of ($23-$22) =$1/Unit

Case 2: When there is no room/ idle capacity

Suppose there is no room for producing these units but business goes to produce other units that give $4/Unit contribution then the business should:

BUY these units because net cost will be

= $19

Price less savings coming from alternative units produced

[$23-$4]

10.8 Addition or Elimination of a Product Line

Add or drop product line is the method which the company uses to evaluate the performance of a product line (segment) before dropping an underperforming product and focusing on the best-performing one.

Most of the companies are highly likely to drop any product or segment which is not making any profit for the company.

That is good to analyze all products that are making a loss, but it does not mean that we need to stop production of all of them.

The products may not have profit, but they generate sales which enable the company to cover the fixed expense.

However, if the product sale is less than its variable cost, there is no point to keep producing it.

We need to prepare a proper report of each product’s revenue and cost; this information must be separate base on the actual situation.

Example:

Company A has three product lines, X, Y, and Z. The performance of all products can be seen next:

				(In dollars)
Particulars	X	Y	Z	Total
Sale	1,00,000	70,000	1,30,000	3,00,000
Variable Cost	-60,000	-50,000	-60,000	1,70,000
Fixed Cost	-20,000	-30,000	-40,000	-90,000
Net Income	20,000	-10,000	30,000	40,000

The company is considering stopping product Y's production, losing around $ 10,000 monthly.

As the cost accountant, please advise the company if they should drop produce Y.

Solution:

By dropping product Y, we will lose both revenue and variable cost from this product.

However, we still need to pay for the fixed cost, which is unavoidable.

Even the product Y is making losses; it still generates a contribution of $ 20,000 (Sale less variable cost) which will help to cover the fixed cost of $ 30,000. Without product Y, the company will lose $ 30,000 due to the fixed cost.

		(In dollars)
Particulars	**With Y**	**Without Y**
Sale	3,00,000	2,30,000
Variable Cost	(1,70,000)	(1,20,000)
Fixed Cost	-90,000	-90,000
Net Income	40,000	20,000

10.9 Sell or Process Further

What is the Sell or Process Further Decision?

The sell or process further decision is the choice of selling a product now or processing it further to earn additional revenue.

This choice is based on an incremental analysis of whether the additional revenues to be gained will exceed the additional costs to be incurred as part of the additional processing work.

For example,

If a green widget can be converted into a red widget at an incremental cost of $1.00 per unit, then processing further is a good idea as long as the incremental price gain to be achieved is at least $1.01 per unit.

The sell or process further decision most commonly arises when two or more products are generated by a manufacturing process.

At the point when the products can be split apart (the split-off point), there is a choice to sell the goods immediately or attempt to capture additional value by engaging in more processing.

This decision may vary over time, based on changes in the market prices of a product at each stage of processing.

If the market price declines for a later-stage product, it can make more sense to sell it without additional processing.

Conversely, if the market price increases for a later-stage product, the better choice may be to continue with additional processing in order to reap higher profits.

A sell-or-process-further analysis can be carried out in three different ways:

1. Incremental (or Differential) Approach
2. Opportunity Cost Approach
3. Total Project Approach

1. Incremental (or Differential) Approach:

This approach calculates the difference between the additional revenues and the additional costs of further processing.

If the difference is positive the product must be processed further, otherwise not.

2.**Opportunity Cost Approach:**

This approach calculates the difference between net revenue from further processed product and the opportunity cost of not selling the product at split-off point. If the difference is positive, further processing will increase profits.

3.**Total Project Approach:**

This approach (or the comparative statement approach) compares the profit statements of both options (i.e. selling or further processing) separately for each product. The option generating higher profit is chosen.

Example:

Product A and B are produced in a joint process. At split-off point, Product A is complete whereas product B can be process further.

The following additional information is available for Sell of Process Further decision:

Product	A	B
Quantity in Units	5,000	10,000
Selling Price Per Unit:		
At Split-Off	$10	$2.5
If Processed Further		$5
Costs After Split-Off		$20,000

Solution(First Method):

(Incremental Approach):

Incremental Revenue	$25,000
Incremental Costs	20,000
Increase in Profits Due to Further Processing	$5,000

Solution(Second Method):

Opportunity Cost Approach:

Sales in Case of Further Processing	$50,000
Costs:	
Additional Costs	20,000
Opportunity Cost of Not Selling at Split-Off	25,000
Gain on Further Processing	$5,000

Solution (Third Method):

Total Project Approach:

	Split-Off Point	Further Processed
Revenue	$25,000	$50,000
Costs	0	20,000
Net Revenue	$25,000	$30,000
Gain from Further Processing		$5,000

Summary

The success of business depends on the quality of the decisions taken by the concerned responsibility centre. The decision taking, interestingly, is applicable to all of the levels of management namely-Top level, Middle level and Lower level.

As far as the discipline of management accounting is concerned, the decisions in general have got in it the crux of being financial in nature, In other words, the concept of costs and revenues has to be clear to the knowledge level of concerned management accountant to make him/her a fit person for the position he or she is commanding. It is due to this reason, that here came the need to incorporate decision making as one the chapters of management accounting discipline.

At times, the manager has to decide in the emerged short term situations like; if the thing has to be made inside or purchased from outside, whether the output has to be sold at the given level or processed further as one of the inputs for advanced operations etc.

In brief, there is a dire need that the management accountant is well conversed with all the matrices mandatory to formulate in term of costs and revenues to be a competent to cope up with the crucial situations, what are better spelled or called as short term contingencies.

Keywords

Relevant Cost: The cost having relevance in the given situation like wages involved has to be considered as one of the variable cost.

Irrelevant Cost:The cost which are in the form of already done and has got less relevance for the decision maker. Also called as 'sunk cost' and has got lesser benefits as far as the objective of cost control is concerned (because the cost is already expended in the past). Example: Amount spent on the research done to make the operation effective.

Decision: A resolve reached at after due consideration.

Decision Making:The science as well as the art to select one of the best options from the rest.

Short term decisions:Decisions which have got implications for the period at the most one year.

Self Assessment

1. Decision making is --------to select the right course of action.

A. Science

B. Art

C. Both A and B

D. None of the above

2. Make or Buy decision situation is concerned with

A. Making a product inside the business

B. Buying a product outside the business

C. Both A and B

D. Considering the pros and cons of making inside or buying outside.

3. Costs IRRELEVANT to a decision are often described as:

A. Costs paid in the past

B. Costs committed to in the past

C. Escapable

D. Only A and B

4. Costs RELEVANT to a decision are often described as:
A. Costs paid in the past
B. Costs committed to in the past
C. Escapable
D. Only A and B

5. Costs RELEVANT to a decision are often described as:
A. Incremental
B. Additional
C. Avoidable
D. All of the above

6. Contribution is equal to –
A. Sales Price
B. Variable cost
C. Sales Price plus variable cost
D. Sales price less variable cost

7. Fixed cost has got one of the advantages in term of:
A. Period cost
B. Fixed in nature
C. Not variable
D. Can be used for leverages affects

8. It is recommended that "the Rich companies preferably should have more------ cost in its cost structure".
A. Fixed
B. Variable
C. Semi Variable
D. Semi Fixed

9. It is recommended that "the Poor companies preferably should have more------- cost in its cost structure".
A. Fixed
B. Variable
C. Semi Variable
D. Semi Fixed

10. There are steps followed in decision making:

1) Step: Identify the alternatives

2) Step: Identify the decision

3) Step: Weigh the evidence

4) Step: Choose among alternatives

What is the right sequence?

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

11. A sell-or-process-further analysis can be carried out in three different ways:

1. Incremental (or Differential) Approach

11. Opportunity Cost Approach

111. Total Project Approach

Select the right inference applicable to above short term decision:

A. The answer from either of the approaches will be same
B. The answer from every approach will be different
C. Both A and B
D. None of the above

12. If marginal cost is less than the marginal revenue then the firm should-
A. Stop producing after this point
B. Produce after this point
C. Shut down the production
D. None of the above

13. If marginal cost is equal to the marginal revenue then the firm should-
A. Stop producing after this point
B. Produce after this point
C. Both A and B
D. None of the above

14. The optimum stage of production is-
A. When the marginal cost is equal to marginal revenue
B. When the marginal revenue is greater than the marginal cost
C. When marginal revenue equals marginal cost
D. None of the above

15. Shut down point is the point when
A. Marginal revenue equals marginal cost
B. Total revenue equals total fixed cost
C. Total revenue equals fixed cost plus variable cost
D. All of the above

Answers for SelfAssessment

1.	C	2.	D	3.	D	4.	C	5.	D
6.	D	7.	D	8.	A	9.	B	10.	D
11.	A	12.	B	13.	A	14.	C	15.	B

Review Questions

1. What is decision? Discuss the process of decision making?
2. Differentiate between relevant cost and irrelevant cost?
3. What is the difference between incremental approach and total project approach used in the short term decision of sell or process further?
4. Write a note on short term decision situation 'Make or Buy Decision'.
5. Discuss the applicability of marginal costing in the context of decision making?

Further Readings

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Unit 11: Artificial Intelligence and Analytics

CONTENTS

Objectives

In this unit, student will be able to understand:

- Meaning of Artificial Intelligence
- Meaning of Analytics
- Meaning of Artificial Intelligence and Analytics
- Business benefits of AI Analytics
- Types of AI
- Finance and Accounting transformation by AI
- Artificial Intelligence helping Accounting Profession.

Introduction

The present era of business is witnessing revolutionary changes in term of usage of information technology (IT). There is no doubt that the computers have helped business in phased transformation manner. Simply phased transformation means that the use of computer in professions is emerging stronger and stronger than ever before (previous applications). There is no doubt that there are advances coming in the developments and applications of computer in every facet of life. As far as the profession of accounting is concerned there are witnessed remarkable changes in term of application of computer. Enterprise Resource Planning (ERP) Systems, Commercial Accounting Software, Custom Accounting Software are some of the types of accounting software.

The advantages of using computers in the field of accounting are like:

- Optimized business operations
- Improved accuracy
- Reduced operation cost
- Secured database

- Synchronized files
- Simplified tax compliances
- Automated record keeping

11.1 Meaning of Artificial Intelligence:

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems.

Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision.

Artificial Intelligence(AI) is important because it can give enterprises insights into their operations that they may not have been aware of previously and because, in some cases, AI can perform tasks better than humans.

AI tools often complete jobs quickly and with relatively few errors particularly when it comes to repetitive, detail-oriented tasks like analyzing large numbers of legal documents to ensure relevant fields are filled in properly.

Artificial Intelligence (AI) helped fuel an explosion in efficiency and opened the door to entirely new business opportunities for some larger enterprises.

Example:

Uber has become one of the largest companies in the world by doing Artificial Intelligence.

Prior to the current wave of AI, it would have been hard to imagine using computer software to connect riders to taxis.

Artificial Intelligence utilizes sophisticated machine learning algorithms to predict when people are likely to need rides in certain areas, which helps proactively get drivers on the road before they're needed.

As another example,

Google has become one of the largest players for a range of online services by using machine learning to understand how people use their services and then improving them

.Today's largest and most successful enterprises have used AI to improve their operations and gain advantage on their competitors.

Artificial neural networks and deep learning artificial intelligence technologies are quickly evolving, primarily because AI processes large amounts of data much faster and makes predictions more accurately than humanly possible.

While the huge volume of data being created on a daily basis would bury a human researcher, AI applications that use machine learning can take that data and quickly turn it into actionable information.

The primary disadvantage of using AI is that it is expensive to process the large amounts of data that AI programming requires.

Advantages

1. Good at detail-oriented jobs;
2. Reduced time for data-heavy tasks;
3. Delivers consistent results; and
4. AI-powered virtual agents are always available.

Disadvantages

1. Expensive;
2. Requires deep technical expertise;

3. Limited supply of qualified workers to build AI tools;
4. Only knows what it's been shown; and
5. Lack of ability to generalize from one task to another.

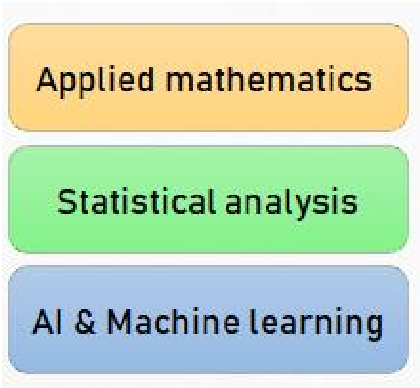
11.2 What is Analytics?

Analytics refers to the process of identifying, interpreting and communicating meaningful patterns of data.

Business analytics refers to applying this process to answer business questions, make predictions, discover new relationships, and ultimately make better decisions.

In essence, analytics is the process of taking raw data and applying some form of analytical technique in order to find meaningful patterns in the data.

The analytical techniques that we can use vary, although a few of the most popular methods include:



The field of analytics can be further broken down into several stages as highlighted in the Gartner Analytic Ascendancy model.

Figure 2. Gartner Analytic Ascendancy Model

The Gartner Analytic Ascendancy model is divided into four stages of increasing difficulty and value, and these include:

1. Descriptive analytics: The first stage of analytics is hindsight-based and asks the analyst to determine what has already happened in the data.

2. Diagnostic analytics: The next stage is more insight-driven and asks the analyst to identify why a particular event or change in the data occurred.

3. Predictive analytics: As we move past insights, the next step in analytics is based on foresight and determining what will happen next.

4. Prescriptive analytics: Finally, the most difficult and valuable stage in analytics is often determining how exactly we can make the desired outcome become a reality.

AI analytics refers to a subset of business intelligence that uses machine learning techniques to discover insights, find new patterns and discover relationships in the data.

In practice, AI analytics is the process of automating much of the work that a data analyst would normally perform.

While the goal is certainly not to replace analysts, AI analytics often improves a data analyst's capabilities in terms of speed, the scale of data that can be analyzed, and the granularity of the data that can be monitored.

Augmented analytics is yet another class of analytics that Gartner says will be the future of analytics.

Augmented analytics uses artificial intelligence and machine learning to look for patterns in data or discover valuable insights without the involvement of data scientists.

11.3 What are the Business Benefits of AI Analytics?

AI Analytics is automated data analysis using the power of today's artificial intelligence and machine learning technologies.

Traditional time-consuming and people-intensive tasks are replaced by AI analytics.

Definitely AI is disruptor, turbo charging business to solve previous unsolvable challenges.

In addition to structured data sources, AI is increasingly able to analyze unstructured data, via the use of AI analytics tools such as natural language processing (NLP), speech analytics transcription and computer vision for image and video analytics.

The ability of AI systems to analyze data autonomously has multiple business benefits.

Chief among them is reducing the labor cost of data scientists and other highly paid and limited-availability analytics professionals.

The benefits of using AI in analytics include:

1. **Risk management.** AI analytics can improve the effectiveness of risk management models and create smarter strategies.

2. **Innovative products.** AI analytics tools perform big data analysis that can drive updates to existing products and creating new ones.

3. **Turbocharged supply chain.** Supply chain executives recognize AI in analytics as a disruptor that empowers them to apply data-driven knowledge to solve previously unsolvable challenges.

4. Customer engagement. Use AI analytics tools to determine what customers are looking for—acquire them, retain them and cultivate their loyalty.

5. **Successful marketing campaigns.** Create focused and targeted campaigns with AI analytics from current customer purchases.

11.4 The 4 Types of Artificial Intelligence (AI)

According to the current system of classification, there are four primary AI types:

1. Reactive,

2. Limited memory,

3. Theory of mind, and

4. Self-aware.

1. Reactive AI:

The most basic type of artificial intelligence is reactive AI, which is programmed to provide a predictable output based on the input it receives.

Reactive machines always respond to identical situations in the exact same way every time, and they are not able to learn actions or conceive of past or future.

Examples of reactive AI include:

- Deep Blue, the chess-playing IBM supercomputer that bested (defeated) world champion Garry Kasparov
- Spam filters for our email that keep promotions and phishing attempts out of our inboxes

Limitation of Reactive AI:

Reactive AI is limited in its scope as they cannot work beyond the task for which they are initially designed.

It makes them inherently limited.

2. Limited Memory AI:

Limited memory AI learns from the past and builds experiential knowledge by observing actions or data.

This type of AI uses historical, observational data in combination with pre-programmed information to make predictions and perform complex classification tasks.

Example of Limited Memory AI:

Autonomous vehicles use limited memory AI to observe other cars' speed and direction, helping them "read the road" and adjust as needed.

This process for understanding and interpreting incoming data makes them safer on the roads.

Limitation of Limited Memory AI:

As the name suggests this type of AI has limited scope.

In the example, the information that autonomous vehicles work with is fleeting, and it is not saved in the car's long-term memory.

3. Theory of Mind AI

Machines with emotions and intelligence come in the category of 'theory of mind AI'.

Example:

Robot, an emotionally intelligent machine that looks and sounds like a real human being is example of theory of mind AI.

Limitation of theory of mind AI:

There are a number of hurdles in achieving theory of mind AI due to the fact that it is difficult to mimic complex human fluid behaviors in totality.

4. Self-aware AI

The most advanced type of artificial intelligence is self-aware AI, when machines can be aware of their own emotions, as well as the emotions of others around them.

They will have a level of consciousness and intelligence similar to human beings. This type of AI will have desires, needs, and emotions as well.

Machines with this type of AI will be self-aware of their internal emotions and mental states.

They will be able to make inferences (such as "I'm feeling angry because someone cut me off in traffic") that are not possible with other types of AI.

Limitation of Self Aware AI:

This type of sophisticated AI is yet to be developed and so far no such hardware or algorithms is developed to support it.

11.5 Finance and Accounting transformation by AI

The main approach of artificial intelligence is to gradually and strategically discover ways to find how computers can perform complex jobs in given situations as humans would (CHUKWUDI, ODOH, 2018).

The potential of technologies and system objects lies more in their intelligence, versatility, and complexity than in the source of their power (LOMBARDO, 2015).

Practicing accountants have been using technology for many years to increase capacity and make effective and strategic decisions.

ICAEW identified three broad issues that technology can help accountants solve (ICAEW, 2018).

These include:

1. Providing cheap and accessible data to support decision-making.
2. Generating new ideas based on data analysis.
3. Spending more time on important tasks such as problem solving, planning and strategizing, decision-making, relationship building, and leadership.

Technology driven by artificial intelligence provides important improvements in all areas of accounting, is able to provide accountants with powerful abilities, and automate various tasks and solutions.

In addition, the rapid change in capabilities and the nature of artificial intelligence systems allow for continuous improvement.

Information and communication technologies (ICTs) are used not only by enterprises.

The global development of technologies for the implementation of various activities is one of the ways to improve existing mechanisms.

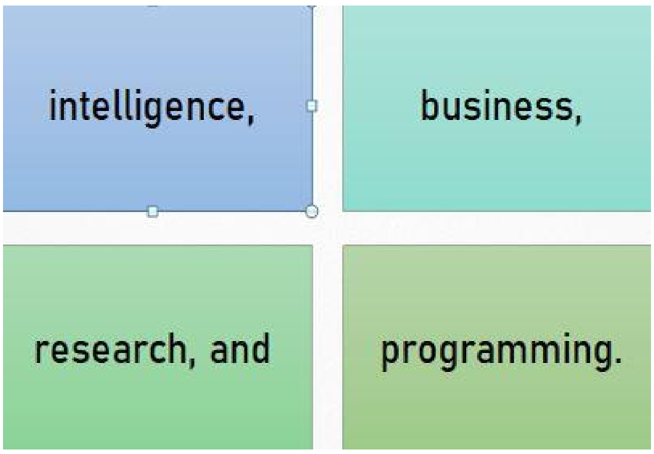
The Internet has become the main source of information in the field of communication and information transmission.

Caution:

Artificial Intelligence (AI) is the emergence of a technology that automatically processes input actions efficiently and pliantly.

It is a revolutionary technology to improve the productivity of any profession. The four dimensions given by Carol and O'Leary describe artificial intelligence.

These dimensions include:



Intelligent measurement refers to the use of machinery and equipment so that human involvement in operations is carried out from the point of view of business and research (CAROL; O'LEARY, 2013).

The programming field involves significant programming learning, problem solving, and the search for various applicable techniques, as artificial intelligence researchers consider the imitation of human thinking to be an important part of artificial intelligence (CAROL; O'LEARY, 2013).

Artificial intelligence has been introduced into the accounting profession for more efficient, convenient and adequate performance of accounting activities and obtaining information with the help of electronic services through computerized administrative services and the Internet.

This will enable all parties (government agencies, businesses, stakeholders, suppliers, revenue recipients, and the public) to operate, conduct transactions, and share information.

This system of AI can be created in corporate bodies and as an accounting education. The use of technology in accounting has become widespread due to technological developments and its use for obtaining management information based on integrated accounting information systems (GÜNEY, 2014).

The main purpose of accounting is to provide information in the most appropriate and adapted form to the appropriate users for making economic internal or external decisions.

All applicable fields in the modern world have adopted and adapted to the use of information and communication technologies (BALDWIN, 2006).

The accounting profession is a broad sector that includes auditing, taxation, management, forensic science, corporate reporting, and many areas of accounting that are not left out in this evolutionary transformation.

11.6 Artificial Intelligence(AI) and Accounting Profession

The accounting profession is a broad sector that includes auditing, taxation, management, forensic science and corporate reporting.

- Accounting technology has become important due to large scale use of technology in the profession of accounting.
- It is therefore very necessary that accounting technology should be important part of educational sector.

Moreover, it is imperative to encourage students to acquire knowledge and literacy in a variety of accounting applications and information.

The use of accounting technology in accounting profession is revolutionary development and helps managers to take strategic decisions more effectively than it has in the past.

Accounting profession has a history of using artificial intelligence (AI) for more than 25 years (GREENMAN, 2017).

Machine learning models, AI enhancements applied to data or other AI developments can complement human thinking.

All these can be used to mitigate fraud, human error, and improve the accuracy of accounting functions (SHIVANI, 2020).

In such applications laythe importance of artificial intelligence (AI) for the accounting professionals and accounting profession in broader terms.

Technology helped businesses.

New technologies create better businesses, enabling them to enter new markets faster, make significant global contributions, gain insights, and build relationships with existing and potential customers (ELLIOTT, 1992).

AI activities will be critical to accounting practices.

Accounting managers will be freed from the intensive and monotonous work in the domestic accounting practice.

AI system will help to solve problems that have been missed or not identified by human input.

Automation, digitization, processing, and sorting of all types of data with the help of artificial intelligence will reduce the cost of performing these tasks manually and ensure high productivity.

- AI creates an opportunity to effectively use the available resources and information.
- The gap between the fields of accounting and computer science in artificial intelligence can be closed by practicing accountants and researchers, as they combine both fields to improve business productivity (FRANCIS, 2013).

The continuous development and expansion of technology is not about taking on human involvement, but about combining human experience and machine learning models that can complement human thinking to produce remarkable results.

Every area of technology in alliance with artificial intelligence will have a significant impact on business as the world evolves towards development at all angles, such as quantum computing or block chain.

- The goal of creating new technologies is to carry processes of operations with high accuracy, efficient performance with the elimination of all forms of errors.
- Artificial intelligence will create a glamorous future for the accounting profession.

Artificial intelligence is an opportunity for the growth and development of the business world today.

There is need to acquaint students with AI fundamentals to make them capable professional.

Practicing accountants and students should get proper and adequate education and training in accounting technology developments in order to gain experience,reliable skills in applying accounting and technological knowledge in combination and become a significant value for themselves and in the business world (SEYAL, NOAH & RAHIM, 2002).

The developed technologies can show their full capabilities when studied and used properly. Technology has to be fully exhausted to extract real from it.

There is need to understand the specific characteristics of AI to learn how they can be applied to real-world problems (ATTOLINI; THOMPSON, 2014).

There is no doubt that around the world, Digital Technologies in various areas of business activity is becoming more and more relevant every year.

The use of digital tools has dramatically changed the way information is collected, stored, processed, and transmitted.

In the contemporary business world, technology is used to such extents that the competitiveness of organizations is becoming synonymous with the extent of use of information technology.

The predominance of accounting practice over its methodology mandates development of related sciences.

Digital Technology has become integral part of every small business.

Digitalization has led to significant changes in the way accounting is conducted and has a positive impact on its development (GREENMAN, 2017).

Personal computer equipped with various software products is the minimum technical necessity for every such business.

The use of software allows products like: to create electronic forms of documents and reports, analyze them, ensure the reliability of data storage which greatly facilitates the work of an accountant, reducing the risk of errors and allowing internal and external users to have free access to information.

AI enhancements, Cloud technologies, which are one of the most global innovations are used in accounting, are essentially some servers on the Internet that are used for processing and further storing certain information (ICAEW, 2018).

Accounting in an online format, is example of using cloud technologies. It is enough to pay for access to an Internet program which allows one access to programme.

Cloud Technology enjoys quite extensive popularity, which is quite possibly due to the ease of its use.

It should be noted that a number of tasks are becoming significantly simplified with the use of cloud technologies (KALYAGIN, 2009)

Possibility of temporary rental of certain software is one of the advantages that cloud technologies give to employees of the accounting sector.

Rental software is carried out without directly purchasing a license, also there is no need to configure and constantly update computer programs that are installed directly on the employee's personal computer.

When using cloud technologies, the equipment itself, on which the workflow is carried out, is practically not loaded, so there is no need to buy more expensive computers and other related tools, since the main load falls on Internet servers.

Increased mobility of employees is another advantage of cloud technologies.

Employees carry out work activities from home, also they can move between offices or within the organization, while not stopping the workflow.

The use of technology eliminates the need for long-term training of employees and it reduces the costs of the organization (RAKHIMBERDIEV, 2020).

However, despite such a number of advantages, cloud technologies also have a number of disadvantages that can negatively affect the labor process and its results.

Also the use of cloud technologies does not exclude the possibility of problems that are associated with both system failures and interference in the Internet connection (KALYAGIN, 2009).

Summary

Artificial Intelligence (AI) has come to the level of "core competency" for a business. Without consideration to AI, straightforwardly, the business model is "a lagged behind model". In the contemporary World the AI has become synonymous with the word" Excellence" and the term "Business Excellence".

The reason being that the AI supported businesses directly gets the advantages, which are understood to be all, coming from computer and information technology. Evidently, every business big or small uses computers and information technology for the reasons well stated.

Keywords

Artificial: The thing which is not natural.

Artificial Intelligence: Computer replacing human acts.

Transformation: Steadily changing.

Accounting Transformation: Computer supported accounting functions.

SelfAssessment

1. Artificial intelligence has dis-advantages to accounting profession like

A. Speed

B. Accuracy

C. Cost

D. Only A and B

2. The word 'artificial' in AI means

A. Fake

B. Not Natural
C. Machine in lieu of men
D. Men in lieu of machine

3. Which of the following is most advanced AI:
A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

4. Which of the following is least advanced AI:
A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

5. Which of the following is the chronic/perennial limitation of AI:
A. Cost
B. Superiority
C. Data Safety
D. Credibility

6. AI is :
A. Line organisation
B. Staff organisation
C. Support Function
D. Both Line and Staff organisation

7. The major change witnessed in term of AI transformation is:
A. The role of professionals taken over
B. The professional to lean towards AI
C. The professional bodies incorporating AI
D. All of the above

8. Which of the following resembles most with human:
A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

9. Office gadget'Calculator' is an example of
A. Limited memory AI
B. Theory of mind AI

C. Self-aware AI
D. Reactive AI

10. Robot is example of
A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

11. If monkeys are exactly humans, then,

Choose the correct option from the following options which perfectly simulate given AI stage:

A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

12. Monkeys are not exactly humans then,

Choose the correct option from the following options which perfectly simulate given AI stage:

A. Limited memory AI
B. Theory of mind AI
C. Self-aware AI
D. Reactive AI

13. Which of the followings is the accounting software?
A. FoxPro
B. SAP
C. Tally
D. All of the above

14. Mr. Intelligent is reading on –line newspaper and in between there came a flash advertisement for one of the best institutes for MBA programme?

Interestingly, it is the only reason of Mr.Intelligent reading the newspaper!

This emergence is good example of:-

A. Cloud computing
B. Machine learning
C. Optimal solutions
D. All of the above

15. A declining company has to have ---------leverage(s)?
A. High operating

B. Low operating
C. High financial
D. All of the above

Answers for SelfAssessment

1. C	2. C	3. C	4. D	5. B
6. C	7. D	8. C	9. D	10. B
11. C	12. B	13. D	14. B	15. B

Review Questions

1. What is artificial intelligence? How it helps in the field of management accounting?
2. Write a note on 'Artificial Intelligence and Accounting Profession'.
3. What are the limitations of artificial intelligence?
4. Discuss advantages and disadvantages of artificial intelligence.
5. What is the meaning of 'finance and accounting transformation by AI'?

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Unit 12: Transfer Pricing

CONTENTS

Objectives

In this unit, student will be able to:

- Understand the concept of Transfer Pricing
- Understand the Relevance of Transfer Pricing
- Understand Various Methods for Calculating Transfer Price
- Understand the various methods of Transfer Pricing
- Solve practical problems of Transfer Pricing

Introduction

In business there comes a situation when the nature of the production is:

- In the form of phases
- The output of goods or services of one division is the input for the second division and so on.
- There can be transfer of output to the next department or the goods can be sold to outside parties.

Similarly the transfer pricing is a note of all above stated things as to:

- If the goods or services of one department has to be internally dealt or has to be sold to outside parties (buyers).
- What has to be the price in the above stated situations?

Definitely there has to be sound mechanism regarding a strategy formulated to transfer the goods for very apparent reasons like:

1. Profitability of the concerned departments (Transferor and transferee).
2. An overall profit of the organization is affected and there has to be considered.

3. Tax implications of the transfer transactions, if the tax regime is different for each of the department.

12.1 Transfer Pricing-Meaning

In managerial accounting, the transfer price represents the price at which one subsidiary, or upstream division of a company, sells goods and services to another subsidiary, or downstream division.Goods and services can include components, parts used in production, labor, and general consulting services.

Transfer prices affect three managerial accounting areas:-

1. Transferprices determine costs and revenues among transacting divisions, affecting the performance of each division.

2. Transfer prices affect division managers' incentives to sell goods either internally or externally.

If the transfer price is too low, the upstream division may refuse to sell its goods to the downstream division, potentially impairing the company's profit-maximizing goal.

3. Finally, transfer prices are especially important when products are sold across international borders.

The transfer prices affect a company's tax liabilities if different jurisdictions have different tax rates.

12.2 Determining a Transfer Price

Transfer prices can be:-

1. Market-based
2. Cost-based, or
3. Negotiated method.

1. Market Based Method:

Under the market-based method, the transfer price is based on the observable market price for similar goods and services.

2. Cost Based Method:

Under the cost-based method, the transfer price is determined based on the production cost plus a markup if the upstream division wishes to earn a profit on internal sales.

3. Negotiated Method:

Finally, upstream and downstream divisions' managers can negotiate a transfer price that is mutually beneficial for each division.

12.3 Impact of a Transfer Price

Transfer prices determine the transacting division's costs and revenues.

If the transfer price is too low, the upstream division earns a smaller profit, while the downstream division receives goods or services at a lower cost.Lower transfer price affects the performance evaluation of the upstream and downstream divisions in opposite ways.

For this reason, many upstream divisions price their goods and services as if they were selling them to an external customer at a market price.

If the transfer price is lower than the market price, the upstream division may refuse to fulfill internal orders, and deal exclusively with outside parties.Even though this can bring extra profit, this may harm the overall organization's profit-maximizing objective in the long term.

Similarly, a high transfer price may provide the downstream division with the incentive to deal exclusively with external suppliers

12.4 Transfer Prices and Tax Liabilities

Transfer prices play a large role in determining the overall organization's tax liabilities.

If the downstream division is located in a jurisdiction with a higher tax rate compared to the upstream division there is an incentive for the overall organization to make the transfer price as high as possible.

This results in a lower overall tax bill for the entire organization.

However, there is a limit to what extent multinational organizations can overprice their goods and services for internal sales purposes.

A host of complicated tax laws in different countries limit the ability to manipulate transfer prices.

Conclusion

The transfer price impacts the performance of both subsidiaries that transact with one another.

A price that is too low dis-incentivizes an upstream division from selling to a downstream division as it results in lower revenues.

A price that is too high disincentives the downstream division from buying from the upstream division, as costs is too high.

Arriving at a fair transfer price is not only beneficial to both subsidiaries but allows a company to reach profit maximization, as well as allowing a company to possibly take advantage of favorable tax setups.

The Internal Revenue Service (IRS) stipulates that the transfer price should be reflective of the price that the divisions would incur with external parties under the same circumstances.

12.5 Calculating Transfer Price

Worldwide it is through sharing that the industry and business is growing.Sharing can be done in forms like, subsidiaries operating nationally or internationally.

Calculating the price of goods, materials and labor shared through transactions is an important part of business, known as transfer pricing.Transfer pricing models, or transfer cost models, are the methods used to sell a product from one subsidiary to another in a specific company, particularly when various subsidiaries of a parent company act as separate profit centers or businesses. Transfer pricing typically gets used for tax purposes and to influence the purchasing behavior of the subsidiaries, most often for international corporationsTransfer pricing essentially is the pricing of intra-corporate transactions, like trading supplies or labor between departments or organizations.

12.6 Transfer pricing models

Transfer pricing models often get categorized as one of two types of methods:

A. Traditional transaction methods

B. Transactional profit methods

A. Traditional transaction methods:

These measure conditions of actual transactions between enterprises and compare them against controlled transactions, often using price and gross margins, though getting detailed data and records can be challenging.

B. Transactional profit methods:

These measure net operating profits from controlled transactions and compare them against the profit level of enterprises using similar transactions.

Transfer pricing models-Goals

The fundamental goals of using transfer pricing include:

- To maximize total profits after tax
- To reduce customs duty payments or fees
- To prevent import quota restrictions or value limitations
- To enhance credit ratings of subsidiaries through financial reports
- To transfer funds within company policy and government regulations
- To minimize exchange controls and exposure
- The principles and practices of transfer pricing are consistent around the world, in part because of pricing guidelines set up by the Organization for Economic Co-operation and Development (OECD)
- Organizations and companies use business analytics along with international business regulations and laws to research and evaluate the best transfer pricing model to use for a transaction, and sometimes it might use different transfer pricing models for different transactions.

There are five common transfer pricing methods used in business, which many tax authorities approve and accept:

1. Comparable uncontrolled price (CUP)

2. Cost-plus-percentage model

3. Resale price model

4. Transaction net margin method (TNMM)

5. Profit-split model

1. Comparable uncontrolled price (CUP):

This frequently used method compares the price of goods and services in a transaction within a company to the price of goods or services between independent and unrelated parties.

This CUP assessment offers a comparable condition to let tax authorities know if an accurate and fair price happened in the intra-company exchange.

Also referred to as market-set pricing, it uses fair market price as its basis.

Example:

For example, a company that manufactures a product must consider its retail price if it was to sell to others, and a price for selling the product with the organization or parent company should still show a fair market price to yield profits.

The limitation of this method is that the fluctuating commodity prices can challenge this transfer pricing model. Like the volatility in oil pricing, for example.

2. Cost-plus-percentage model:

The transfer pricing method compares gross profit to costs of sales, and the division or subsidiary providing the goods or services sets the transaction price with additional markup to generate a profit on the item.

The cost-plus-percentage model often gets used in particular industries, like aviation, aerospace and the automobile and transportation industry.From a regulation and tax point of view, it is important for the profit markup to be equal to what a third party would charge or earn for a similar sale, with market conditions and risk assessment factored in.

One challenge in the cost-plus-percent transfer pricing model is keeping the supplier division or company motivated to be efficient in manufacturing practices to reduce or maintain costs to sustain competitive pricing.

3. Resale price model:

The resale price model for transfer pricing reviews the gross margin, being the difference between the prices an item gets bought for and that of which it sells to a third party.

It only looks at the margin as the transfer price, excluding any customs fees or duty charges, similar to the cost-plus-percent model.

More distributors, wholesalers and resellers use this transfer pricing model more so than manufacturing companies and businesses.

4. Transaction net margin method (TNMM):

Many multinational companies favor this transfer pricing model because the foundation is net profit instead of external market pricing.

Whereas the CUP, cost-plus-percentage and resale price models all use actual costs of comparable goods and services for external transactions,

TNMM compares net profits earned in a controlled intercompany transaction to the net profit margin earned by similar transactions with third parties.

Sometimes TNMM even considers the net margin earned by a third party to another third party transaction, too.

- Organizations can use TNMM to measure net profits against its sales, costs and assets.
- Because this method compares profit margin rather than actual cost.
- TNMM is helpful to use when pricing data isn't available and the market price is undeterminable.
- While many tax authorities prefer the CUP transfer pricing model, the TNMM practice is growing in use.

5. Profit-split model:

Similar to TNMM, the profit-split model also uses profit rather than comparable market price. Here, transfer pricing gets determined by reviewing how the profit of a transaction would get divided across the independent businesses involved.

Profit Split Model factors in the contribution of each business associated with the transaction.

Practical Problem No.1

MS Company Ltd. is a leading manufacturer of a certain consumer durable product. The company has two divisions - Engineering and Assembly. The output of the engineering division is transferred to the assembly division for further processing and assembling before being sold to the customer as complete product. Verification of the company’s records reveals that the variable cost per unit of the product for engineering and assembly are Rs. 250 and Rs. 300 respectively. The fixed cost of engineering division is Rs. 15,000 and that of the assembly division is Rs. 10,000. The product variable cost per unit of engineering division is Rs. 400, and the total output is 100 units which are sold to customer on completion @ Rs. 2000 per unit. If the engineering division decides to charge its transfers to assembly division at cost plus 150%, what will be ABC’s overall profit and the profits of its two divisions?

Solution:

			(In Rupees)
	Engineering	**Assembly**	**Total**
Division Variable Cost/Unit	25000	30000	55000
Fixed Cost	15000	10000	25000
Product Variable Cost/Unit	40000		40000
Total Cost	80000		
Pricing Strategy Cost Plus150%	120000		
Transferred Cost		120000	
Total Cost	**80000**	**160000**	**120000**
Sales Proceeds	**120000**	**200000**	**200000**
Profit	**40000**	**40000**	**80000**

Practical ProblemNo.2

RJ Co. Ltd is the manufacturer of a certain electronic product. The company has three divisions—

D1 D2 and D3. Output of D1 is transferred to D2 and that of D2 to D3 for further processing and assembling before they are passed on to the hands of the customer as final product.The company reports that variable costs per unit of the product for D1 D2 and D3 are Rs. 300, Rs. 200 and Rs. 100, respectively. The fixed costs for the three divisions are Rs. 20,000, Rs. 15,000 and Rs. 10,000 respectively .The product variable cost per unit is Rs. 400 for division D1.If the total output of the company for a certain period is 1,000 units, which are sold to the customer at Rs. 1,400 per unit, and if division D1 decides to charge its transfers to D2 at cost plus 120% and D2 to D3 at cost plus 110%, what is the company's total profit and the profits of its divisions?

Solution No.3

Department		**D1**	**D2**	**D3**
Variable Cost(Rs./Unit)		300	200	100
Fixed Cost(Rs.)		20000	15000	10000
Product Variable Cost(Rs./Unit)		400		
Units		1000	1000	1000
Pricing Stragegy Cost plus Mark Up		120%	110%	
Selling Price(Rs./Unit)				1400

Department		D1	D2	D3
Variable Cost(Rs./Unit)		300000	200000	100000
Fixed Cost(Rs.)		20000	15000	10000
Product Variable Cost(Rs./Unit)		400000	0	0
Total Cost(Rupees)		720000		
Mark up as per Strategy Value(Rs,)	20%	144000		
Gross Cost(Rupees)		864000		
Transferred Cost(Rs.)			864000	1186900
Total Cost(Rs.)	10%		1079000	1296900
Mark up as per Strategy Value(Rs,)			107900	
Gross Cost(Rupees)			1186900	1296900
Sales proceed(in Rupees)				1400000
Profit(Rs.)				103100
Total Profit(In Rupees)				355000

Problem No.3

All other things in numerical No.2 remaining constant, if division D1 decides to charge its transfers to D2 and D2 to D3 at current market prices per unit of Rs. 850 and Rs. 1200 'respectively,…

Whatwill be the change in the profits earned by the company and its divisions in comparison to the cost based transfer prices?

Solution:

Department		D1	D2	D3
Variable Cost(Rs./Unit)		300000	200000	100000
Fixed Cost(Rs.)		20000	15000	10000
Product Variable Cost(Rs./Unit)		400000	0	0
Total Cost(Rupees)		720000		
Gross Cost(Rupees)		720000		
Transferred Cost(Rs.)			850000	1200000
Total Cost(Rs.)			1065000	1310000
Sales proceed(in Rupees)		850000	1200000	1400000
Profit(Rs.)		130000	135000	90000
Total Profit(In Rupees)				355000

Problem No.4

All other things in numerical No.2, remaining unchanged, if the three divisions D1, D2 and D3 of the company bargain an decide that division D1 will charge Rs. 835 per unit on its transfers to division D2 and that division D2 will charge Rs. 1,160 per unit on its transfers to division D3,

What will be the division's profits under the changed situation and also the profit of the company?

Solution No.4

Department		D1	D2	D3
Variable Cost(Rs./Unit)	A	300000	200000	100000
Fixed Cost(Rs.)	B	20000	15000	10000
Product Variable Cost(Rs./Unit)	C	400000	0	0
Total Cost(Rupees)	D=(A+B+C)	720000		
Strategy Negotiaed Value(Rs./Unit)	E	835	1160	
Tranfer Proceed(Rupees)	F	835000	1160000	
Transferred Cost(Rs.)	G		835000	1160000
Gross Total Cost(Rs.)	H	720000	1050000	1270000
Sales proceed(in Rupees)	I			1400000
Profit(Rs.)	J	115000	110000	130000
Total Profit(In Rupees)	K			355000

Summary

Transfer pricing is a topic which is necessarily made to help business formulate strategies in situations when the output of one division of similar business can be output for the second division. The pros and cons of such transactions have to be fully considered for the reasons that it:

1. Affects the profitability and cost of the concerned business.
2. The tax implications when the dealing of transfer is between subsidiaries situated in two different countries (different tax regimes).
3. The overall profits of the business are affected and it matters to study the concept of transfer pricing.
4. It is therefore very necessary that the management accountant of the concerned business is fully aware with the dynamics of transfer pricing.

Keywords

Transfer Pricing: The price charged by the one division from the second division of same business.

Transferor Division: The division transferring the units also called the downstream division.

Transferee Division:The division receiving the units also called the upstream division.

Tax Regime: The tax laws of a particular Country.

Cost plus profit: A pricing method in which sales price is fixed by adding profit in the cost.

SelfAssessment

1. Transfer pricing is the pricing of goods or service transferred between:

A. Two divisions of similar business

B. Two subsidiaries of same corporate

C. Two divisions of unrelated business

D. Only A and B

2. Given that both of the departments involved in the transfer of goods or services are in the same tax regime, what will be the effect in term of tax advantage on the total business profit, if the transfer method is:
   - Market based
   - Cost based
   - Negotiated based

A. Total profits of the business will be affected.
B. Total profit of the business will be same
C. Nothing can be said with the given information
D. None of the above.

3. The division transferring the units to another division are respectively called:

A. Upstream; Downstream
B. Downstream; Upstream
C. Transferor; Transferee
D. Both A and C

4. If the selling price is Rs.175 and there is profit charged 25% on the cost then:

   What is the cost price (Rs.)?

A. 135
B. 145
C. 140
D. 150

5. A change of 2% in the sales price brings additional revenue of Rs.50, 000/- then what are the base rupees sales?

A. 20,00,000
B. 5,00,000
C. 2,50,000
D. 25,00,000

6. The tax rates are similar in two different tax regimes, if the goods of one subsidiary are transferred to other subsidiaries at a negotiated price which is Rupees 10,000 more than the cost of downstream subsidiary,

   Then what is theoverall Rupees tax advantage to the business as a whole?

A. 10,000
B. 10,000 loss
C. No tax advantage
D. Information is incomplete

7. The tax rate of upstream subsidiary is 10% lower than the downstream subsidiary, if the goods of one subsidiary are transferred to other subsidiaries at a negotiated price

which is Rupees 10,000 more than the cost of downstream subsidiary, then what is the overall Rupees tax advantage to the business?

A. 1,000
B. 1,00,000
C. (-) 1,000
D. No tax advantage

8. The tax rate of upstream subsidiary is 10% higher than the downstream subsidiary, if the goods of one subsidiary are transferred to other subsidiaries at a negotiated price which is Rupees 10,000 more than the cost of downstream subsidiary, then what is the overall Rupees tax advantage to the business?

A. 1,000
B. 1,00,000
C. (-) 1,000
D. No tax advantage

9. Transfer pricing may affect:

A. Downstream divisional manager
B. Upstream divisional manager
C. Overall profits of the organisation
D. All of the above

10. Which of the following is not the method of transfer pricing?

A. Comparable uncontrolled price (CUP)
B. Break Even Analysis
C. Profit-split model:
D. Transaction net margin method (TNMM)

11. Which of the following is the method(s) of transfer pricing?

A. Comparable uncontrolled price (CUP)
B. Break Even Analysis
C. Profit-split model:
D. Both A and C

12. The cost of producing a machine is Rs.. 12,50,760/- . If the policy of the company is to earn 12% profit on sales price then what should be the Rupees sales price of this machine?

A. 12,50,760
B. 1,70,558
C. 13,21,318
D. None of the above

13. Division A of Beta Limited Supply an item of Rs.100 to Division B @10% margin and division Bfurther sell this item at 10% margin. You need to tell the total Rupees profits of Beta Limited from this deal?

A. 11

B. 10

C. 20

D. 21

14. Division A of Beta Limited Supply an item of Rs.100 to Division B @10% margin and division Bfurther sell this item at 10% margin. You need to tell the total Rupees profits of Division B of Beta Limited from this deal?

A. 11

B. 10

C. 20

D. 21

15. Division a of Beta Limited Supply an item of Rs.100 to Division B @10% margin and division B further sell this item at 10% additional margin. You need to tell the total Rupees profits of Division A of Beta Limited from this deal?

A. 11

B. 10

C. 20

D. 21

Answers for SelfAssessment

1.	D	2.	B	3.	D	4.	C	5.	D
6.	C	7.	C	8.	A	9.	D	10.	B
11.	D	12.	D	13.	D	14.	A	15.	B.

Review Questions

1. What is transfer pricing? What is needed to study transfer pricing?
2. Discuss the consequences of transfer pricing with reference to tax rate differentials between the downstream and upstream subsidiaries of same business.
3. Discuss various methods of transfer pricing?
4. Write a detailed note on comparable uncontrolled price (CUP) method of transfer pricing?
5. Differentiate amongst Cost based, Profit based and Negotiated based transfer pricing methods.

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Unit 13: Management Information System

CONTENTS

Objectives

In this unit, student will be able to:

- Understand the meaning, objectives and Characteristics of Management Information System (MIS).
- Understand the nature and scope of Management Information System (MIS).
- Understand the advantages and limitations of Management Information System (MIS).
- Understand the meaning, kinds, types and elements of management information Report.
- Understand levels of Management and Reporting

Introduction

Management is the art of getting things done from others. If this view of definition of management is taken then the apparent thing coming out is the "duplication of work". The 'authority and responsibility' relationship emerges on the scene and it is therefore very important that there has to a perfect information system. The correct nomenclature to fit to this concept is 'management information system (MIS)'.

In the subject of management accounting, the role of internal system for reporting purpose has always assumed much importance at all times. The person to whom there is the delegation of authority need to reciprocate the things by providing the exact information to justify as to what is the state of the affairs!

13.1 Management Information System(MIS)-Meaning

Needless to say, the Information System is one of the most promising fields today, as it caters to the need of top management, to have right information for decision making.

Management Information Systems helps firms in realizing maximum profits on their investments. The whole system is designed with the aim of enhancing profits, exercising better control and performance planning at all levels**.**

Information systems are used at all the levels of a business organization in order to collect or store data. However, this gathered information needs to be carried out in an efficient manner which actually helps in business growth.

Caution: MIS professionals cater to the informational needs of the business.

They manage the various information systems in such a way that it is able to meet the needs of management, staff as well as clients. MIS professionals play a critical role in areas of information security, integration as well as exchange.

According to G.B. Davis

"Management Information System (MIS) is an integrated man/machine system for providing information to hold up the operations, management and decision making functions in an organization".

Management information system (MIS) is a system to provide selected decision-oriented information needed by management to plan, control, and evaluate the activities of the corporation. It (MIS) is basically concerned with processing data into information.

Understandably, the term Management Information System consists of three words.

They are:

1. Management,

2. Information and

3. System.

Element # 1. Management:

Management is the process of planning, organizing and controlling of the physical and human resources in order to achieve the objectives of an organisation. Managers can prepare the plan in order to achieve the objectives by selecting best course of action.

They can identify the task which are emerged under the operation of an organisation and organised into homogeneous groups. The completion of the task is to be controlled by setting performance standards and avoid deviations from such standards.

In this place, management facilitates the executives for taking number of valued decisions with regard to planning, organising and controlling the performance of task and functions of the business.

Information is derived from the data out of the available data; information is developed and used for decision making purpose. There must be a proper transformation of data into information.

The presentation of information in such a way that is current, readily usable and easily understandable.

Element # 3. System:

A system can be defined as a set of interrelated elements working towards for achieving general objectives of an organisation. There may be much sub-system in an organisation and all such systems are parts of large systems. There is a need of application of principles of system in a business organisation. If so, there is a possibility of integration of the sub-systems through information exchange.

In the words of James A. F. Stoner Management Information System is,

"a formal method of making available to management accurate and timely information necessary to facilitate the decision-making process and enable the organization's planning, control and operational functions to be carried out effectively."

Similarly Management Information System Committee of the Financial Executive Institute defined MIS as,

"An Management Information System is a system designed to provide selected decision-oriented information needed by management to plan and evaluate the activities of the corporation. It is designed within a framework that emphasizes profit planning, performance planning and control at all levels. It contemplates the ultimate integration of required business information sub-systems both financial and non-financial within the company."

13.2 Objectives of Management Information System(MIS)

An effective Management Information System can achieve the following objectives:

1. Facilitates decision-making – Management executives at all levels are taking large number of decisions by receiving the best possible current information. Accurate, reliable, precise and timely information facilitates the decision-making process very easy.

2. Avoid duplication of work – Major portion of the organizational operations are computerized and procedures are simplified. This type of system reduces unnecessary work and eliminates the performance of duplication of work.

3. Savings of time – Efficient methods are applied in the execution of assigned activities and proper direction is available to the employees of an organisation. Standard time is fixed for each work separately. In this way, there is a possibility of savings of time.

4. Establish uniform procedures – Nature of work is different from one department to another department or one section to another section, but standard and uniform procedure is followed in the performance of a work. Uniform procedures ensure proper flow of data from the concerned department of section.

5. Fixing responsibility – Data have to be supplied immediately after execution of work. Hence, it is the responsibility of concerned executive to provide data. In this way, MIS fixes responsibility each executive.

6. Improving service – Necessary training is to be imparted to the executives before installing Management Information System. Hence, improved service is rendered by the executives in an organisation.

The Management Information System should be flexible in nature to incorporate revisions and include additional sub-systems in order to achieve above mentioned objectives.

13.3 Management Information System – Goals

The goals of an ideal MIS are to relieve management from converting data into information, provide relevant information to each management level for effective decision-making and the effective conduct of the job function, and present information that is current and in a readily usable and easily understood format.

To meet these goals, the MIS would possess the following attributes:

i. It would address the primary needs of the management function and not the needs of a person.

ii. It would address the underlying problem, not just the symptoms.

13.4 Characteristics of Management Information System

Management Information System (MIS) is a system developed in the organisation which primarily fulfills the information need of the concerned at various levels of management.

It is therefore very necessary that the system of information to management (MIS) should have the following eight features/characteristics:-

1. Understandable:

Information in summarized form must be understood by the receiver to be correctly interpreted.

Interpreter must be able to decode any abbreviations, shorthand notations or any other acronyms contained in the information.

2. Relevant:

Information is good only if it is relevant. This means that it should be pertinent and meaningful to the decision maker and should be in his area of responsibility.

3. Complete:

It should contain all the facts that are necessary for the decision maker to satisfactorily solve the problem at hand using such information.

Nothing important should be left out. Although information cannot always be complete, every reasonable effort should be made to obtain it.

4. Available:

Information may be useless if it is not readily accessible ' in the desired form, when it is needed. Advances in technology have made information more accessible today than ever before.

5. Reliable:

The information should be counted on to be trustworthy. It should be accurate, consistent with facts and verifiable. Inadequate or incorrect information generally leads to decisions of poor quality. For example, sales figures that have not been adjusted for returns and refunds are not reliable.

6. Concise:

Too much information is a big burden on management and cannot be processed in time and accurately due to "bounded rationality".

Bounded rationality determines the limits of the thinking process which cannot sort out and process large amounts of information. Accordingly, information should be to the point and just enough – no more, no less.

7. Timely:

Information must be delivered at the right time and the right place to the right person.

Premature information can become obsolete or be forgotten by the time it is actually needed.

Similarly, some crucial decisions can be delayed because proper and necessary information is not available in time, resulting in missed opportunities. Accordingly the time gap between collection of data and the presentation of the proper information to the decision maker must be reduced as much as possible.

8. Cost-effective:

The information is not desirable if the solution is more costly than the problem. The cost of gathering data and processing it into information must be weighed against the benefits derived from using such information.

Finally, the information system should have all the qualitative factors, characteristics enabling the concerned managerial person to take right decision at right time and at right cost.

13.5 Nature of Management Information System

Management Information Systems (MIS) can be simply referred to as a system or process that facilitates the smooth working of the organisation.The nature of MIS is truly multifold because it plays a bigger role in business decisions, from costs to employee management.

Here are the major features that portray the nature of MIS:

- MIS is utilized by every level of management.
- It clarifies and focuses on the strategic goals and objectives for the management.
- MIS provides an effective system to analyze costs and revenues and further reviews effectively and efficiently to bring a balanced in finances and costs.
- MIS is maintained either through manual systems or automated systems or a combination of both.
- It also plays an incremental role in identifying, locating, measuring, tackling, and limiting risks.
- It lays down a framework of rules and regulations for the management to bring clear and concise communication between employees.
- MIS provides an objective system of collecting, assessing, and aggregating information for a business

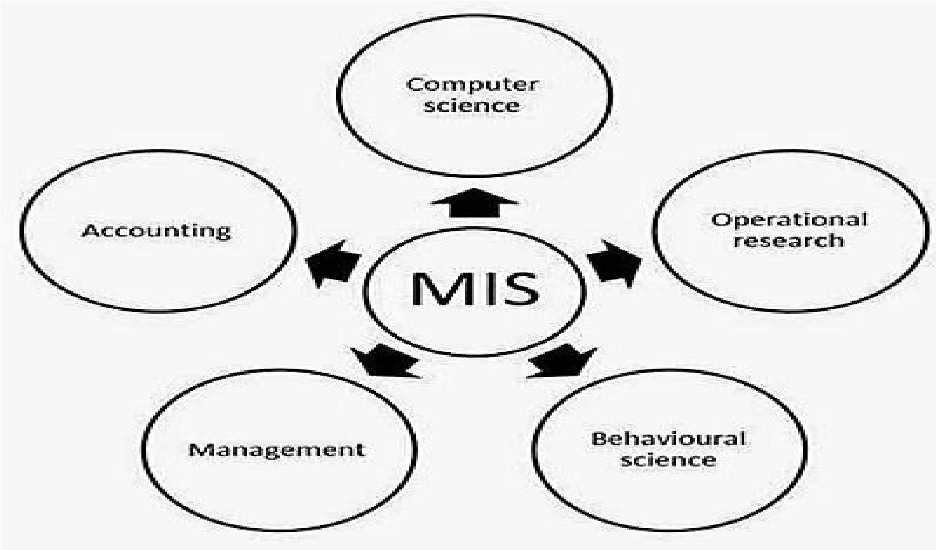
13.6 Scope of MIS

Information Systems are growing at a fast pace to become one of the most promising career fields in today's world.

With everything happening digitally, the demand for MIS professionals is increasing more than ever.

MIS involves performing a number of tasks simultaneously such as-

- Processing data
- Initiating transactions
- Responding to inquiries
- Producing reports and its summaries
- Manage the data created within the structure of a particular business
- MIS acts in an organization just like a nervous system in a body by providing the relevant information for ease in the process of decision making.
- The purpose of MIS is to work towards satisfying the information needs of everyone in the business. It means providing the relevant information to those who need it.
- Thus, MIS has a lot of potentials to become one of the most promising careers for individuals interested in the workings of a business.



13.7 What is the Future of MIS?

Here are the major areas where the future of MIS jobs lies:

- Information Technology (IT)
- Risk Management
- Financial Management
- Business Analytics
- Digital Banking
- Healthcare Administration
- Hotel Management
- Hospital Management
- Digital Marketing and Analytics

13.8 Advantages of Management Information System(MIS)

The MIS helps organisation in following ways:

1. ***Facilitates planning*** –

Planning requires reliable, relevant, and accurate information. These are possible under the effective management information system. The MIS keeps the executives aware of changes in the environment of business. In this way, MIS facilitates the planning function carried on by the executives.

2. Reduce information overload –

All the data collected by an organisation is not required by the managers. Under effective MIS, the data has been divided into relevant and irrelevant. The irrelevant data may create confusion in the minds of managers. Hence, the irrelevant data is avoided with the help of effective MIS and information overload is reduced.

3. Simplifies control –

MIS is acting as a bridge between planning and control. It helps the managers to take a sound decision which simplifies the control function.

4. Assists co-ordination –

MIS is an integrated approach to planning and control. MIS facilitates coordination by keeping each department/section aware of the problem, status, importance, and needs of other departments/sections. It links all decision centers in an organisation.

5. Improves decentralisation –

Monitoring work is also done under the effective MIS. This type of arrangement helps the management to delegate authority without losing control.

13.9 Limitations of Management Information System(MIS)

MIS has got limitations like;

1. In decision-making, MIS cannot take the place of managerial decisions. It is merely a valuable method for top-level executives in making decisions and solving problems.

2. MIS can be considered mainly for quantitative factors.

3. Qualitative decisions about business activities can be made using MIS. An MIS does have limitations, like its developing cost, employee training time, lack of versatility, and the storage of incorrect or incomplete data.

4. For businesses looking to improve their operations management, MIS implementation may be prohibitively costly.

5. The output quality of MIS is directly proportional to the input and process quality.

6. Only those employees who have been educated and well trained are able to work on MIS, hence the employees who are not educated cannot work with MIS.

7. Non-programmed decisions are less useful for MIS.

8. Depending on the MIS style and functionality, making improvements quickly to represent changing business operations can be impossible.

9. The most serious fault in an MIS is when sometimes in a few instances, it provides inaccurate or incomplete information to the management executives. This issue causes heavy costs to the company and sometimes wrong decisions can be carried out due to this MIS is treated as a knowledge flaw.

10. MIS is less effectivein those organizations, where information and sharing it with others is not important.

13.10 MIS Report-Introduction

MIS stands for Management Information system. In the simplest terms, an MIS report can be described as a system that provides important information for the management of your company**.**

MIS collaborates with people, technology, and business processes within an organization. It also describes how the relationship with other organizations and people affect a particular company.

An MIS report is used to highlight the day-to-day business activities, which enables one to monitor the progress of the organization.

MIS reports provide critical insights during decision- making. It serves as a reference point to monitor business and communication.

Understandably, in this new era of emerging technologies, management information systems have become a vital part of successfully running a company. Various Types of MIS reports are prepared periodically (which is either monthly or quarterly in most cases).

These reports are prepared by various departments in the organization and presented to the company's management team.

MIS reports focus on raw data, trends, patterns in that data, and comparisons with relevant past data. MIS reports are also an effective tool for managers to track business operations across various departments.

Furthermore, MIS reports provide clarity and enhance communication. They also help the company managers and the management team to make informed decisions, pinpoints and avoid problems, and capitalize on the current market trends.

Example 1:

If a decision about a new product launch has to be made, the MIS report will have current market trends and employee information.

The data points in the MIS reports will help one make better decisions and improve the company's performance in both the short-term and long-term

MIS reports are crucial for the smooth functioning and growth of the company. Here are a few key points that highlight the importance of an MIS report:

MIS reports are used to collect data from various sources. These include employees, management, documents, executives as well as the raw numbers for business sales. All of these are beneficial for identifying and solving problems within a company.

They can help in making important decisions.

The data collected from the above-mentioned sources is then visualized. This includes presenting the data in the form of bars, graphs, and charts. This provides ease of analysis and helps to gain faster insights from the available data.

An MIS report also helps to track a company's financial growth and financial health. It is often used to track, analyze, and report business income.

An MIS report also serves as an effective tool for communication between employees and their employers, or between employees.

To sum up, it can be said that the MIS Report is the crux of MIS and the very purpose of MIS is to have quality reports to help the concerned in the management of the company.

13.11 Objectives of Preparing MIS Reports

With the coming of the computer age, management information system [i.e., MIS) is becoming popular in the corporate circle for giving quick information to the management.

The purpose of MIS is to report and is to provide the necessary information to the managers and supervisors at various levels to help them to discharge their functions of organizing, planning, control, and decision making.

The old techniques of decision making such as intuition, rule of thumb, etc. are no more relevant and useful in the process of decision making.

Modern managements assemble both quantitative as well qualitative information which can be used for analyzing the pros and cons of various alternative courses of action and thereby facilitating the best course of action.

Thus, modern management functions are information oriented.

It is very difficult to manage effectively without an efficient management information system and the objective function of MIS is fulfilled through one important thing technically called "MIS-Report"

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13.12 Definition of Management Information System

1. "A formal method of collecting timely information in a presentable form in order to facilitate effective decision making and implementation, in order to carry out organisational operations for the purpose of achieving the organisational goals". —Walter I. Kennevan

2. A Management Information System is an organized portfolio of formal systems for obtaining, processing, and delivering information in support of the business operations and management of an organization.Zwass (1992).

If one clearly diagnoses the aforesaid definitions then the essential thing which comes out is "Collecting information for the purpose of reporting to the concerned".

It simply means that reporting is the crux of MIS and REPORT is the quintessential part of MIS.

The objectives of preparing MIS Reports are:

1. Providing quick and timely information to the management.
2. Reports give an idea about the performance of men, materials, machinery, money, and management. Reports throw light on the utilization of resources employed in the organisation.
3. Report should be specific and relevant.

Example2: Cost report help in controlling costs by giving information about idle time, labour turnover, wastages and losses, and surplus capacity.

4. The report should help in lime lighting the crucial aspects of the business.

Example: Performance Report helps in comparison of the actual performance with the standard and budgeted performance and brings variance to the notice of the management to be corrected by taking remedial steps.

5. SWOT Analysis:

Appropriate reports bring to the notice of the management both strengths (i.e., strong points) and weaknesses of the organization to take advantage of the opportunities available and avoid threats by introspecting the weaknesses respectively.

6. MIS reports should bring forth production statistics regarding rejection, defective, and spoilage and their effect on costs and quality of the products.

13.13 Kinds of Reports in MIS

There are different types of MIS reports in every company. These reports range from company to company.

Management Information system reports process data in its raw form. This raw data is generated by the people, business processes, and transactions that are collided to create understandable data points.

Different types of MIS reports aggregate different data points and present them in a format that provides clear insights and conclusions.

The various departments in an organization present MIS reports which outline their department's specific functions.

There can be different types of MIS reports based on which data is being analyzed and what it is being used for.

1. The Summary Reports

Summary reports are a type of MIS reports used to visualize aggregate data and provide a summary.

This summary could be of different business units, different products, different customer demographics among other things. The report is presented in a format that can be understood by the company's management.

Example3:An inventory summary report summarizing the cost of stocking inventory and its purchase value.

A sales summary report summarizes the sales revenue, the geographical distribution of sales, and details of products sold.

2. The Trend Reports

Trend Reports are types of MIS reports that allow company to see the trends and patterns among different categories.

Trend reports are also used to compare different products or services. They are often used to draw comparisons between the actual versus the predicted output/growth within an organization.

These reports help to pinpoint the problem areas in a company and give potential solutions to them.

Example 4: A sales trend report, which will highlight the product sales across different demographics and different time periods.

It will also help the company to understand which products perform relatively better.

3. The Exception Reports

An exception report is a type of MIS reports that is an aggregate report of exceptions, which are abnormal or unusual circumstances within a company.

The exceptions report will collect instances of all such conditions within different departments in the company, and present them to the management in a uniform format.

Exceptions reports are useful for catching problems early, and solving them before they cause a major disruption.

Example 5: An inventory that is seriously under stocked, which has to be refilled on an urgent basis; or a product which is underperforming and needs to be scrapped.

4. On-Demand Reports

The on-demand report is a type of MIS reports that are produced on specific demands from company's management team.

There are no fixed criteria or format that must be included in an on-demand report.

This type of MIS report includes the requirements of a company and the prevailing circumstances will dictate the contents of an on-demand report.

Example 6: A sales manager may want to know the peak sales season for a particular product in a particular location.

This will help the manager to decide whether other similar products may succeed in the same market.

5. Financial Reports

Financial reports are types of MIS reports that can be used to determine the financial condition of an organization. A financial report often includes a company's balance sheets, income, and expense details, and cash flow statements.

Financial reports are used by the company's financial analysts, investors, the board of directors, and even government units to access the overall financial health of your organization. These reports are used in making critical financial decisions within a company.

The financial statement is a subtype of financial report that is used to provide information to shareholders and all other concerned parties.

Example 7: A company might report finance numbers quarterly, semi-annually, or annually.

6. Inventory Reports

Inventory reports are a type of MIS report that is used to manage and keep a track of all the products in the inventory.

The inventory report includes details about the number of products left in stock, the bestselling products, the top-selling categories of products and how they vary by demographic, etc. Inventory reports can help business to make smarter, data-driven decisions.

Example 8: Inventory report might highlight that a particular product sells better in a particular area as compared to others. Then company can then target advertising to increase revenue.

7. Sales Reports

The sales report is prepared by the marketing and sales division of your organization. It includes a visualization of products that have been sold during the last quarter/month in your organization.

The sales data is often visualized by taking into account the budgeted and actual sales numbers.

Sales Report provides an insight into the sales variance (the difference between the budgeted and actual sales), the geographical distribution of products sold, and the timeline of sales among other factors.

Example 9:

During the peak shopping season, a company might sell more products than anticipated, which will reflect in your sales report during the next quarter.

8. Budget Reports

Organizations operate on a variety of budgets. These may include cash budgets, income v/s expenditure budgets, marketing budget, HR budget, production budget, etc.

An MIS budget report contains internal information about your organization. It is used to maintain company's financial health while driving growth.

Example 10:Company's marketing budget during a new marketing campaign is an example of the budget report.

9. Production Reports

Production report is types of MIS report that contains information about the raw production numbers in the company.

The manufacturing division within the company will prepare this report, and provide details of the production targets that were achieved or missed.

Production Report also details the predicted v/s actual products manufactured in the time frame. It may also highlight a production bottleneck or ideas on how to speed up the production process.

Example 11:Production report might highlight an increase in the speed of production due to new machines being allocated.

10. Cash Flow Statements

Cash flow statements are a Types of MIS report that underlines the exact amount of cash inflow versus the cash outflow in the organization.

The cash flow statements include the cash flows from company's operations (the core business), investments (capital investments), and financing (external investors).

These are together referred to as company's 'net cash flow'. Cash flow statements are very important to maintain a profitable business.

Example 12: A cash flow report would detail the exact amount of expenditure versus profits obtained from an advertising campaign.

11. Funds Flow Statement

The company's accounts and finance department is responsible for the preparation of funds flow statement. These statements give insights into the various sources of funding within the company, and how that funding is being utilized.

Fund flow reports usually analyze company's balance sheet from the past two years, and understand the flow of funds from the previous year to the current financial year.

Example 13:The company's increase in sales in raw financial numbers from the past year would be reflected in your fund flow statement.

12. Budgeted & Actual Profit Report

This report highlights the difference (if any) between company's actual and budgeted profit within the specified time frame.

This is types of MIS report that is prepared by the accounts department within your organization. This report also includes an analysis and reasoning of why the actual profits might be less/more than initially budgeted.

These reports help organization to set realistic future targets and plan for business expansion.

Example 14: If a certain product underperformed in sales in an area, the budgeted and actual profit report would attempt to state the reason why.

13. Machine Utilization Report

The manufacturing division prepares the machine utilization report. This report specifies which machines were used at what point during your company's manufacturing process. These reports also detail the time taken by each machine to complete its task, along with the time that the machines remained idle for.

These will help company's manufacturing division to identify if a machine is utilizing too many resources, without giving the required output.

14. Predictive Reports

Predictive reports are usually prepared by analyzing past data and observing trends and patterns. These reports in an MIS system attempt to predict the outcome or the circumstances of the company in the near future.

These reports are very crucial for informed decision making. They can also help in planning and preparation. As an instance, a company might choose to open its e-commerce store just before a festive season, owing to increased trends in online shopping.

15. Report on the Ideal Time

This report is prepared by your company's manufacturing division by comparison of data on the ground level. This report states the time spent by company's workers in different jobs, and the time they spent idle because the resources could not be allocated. Time booking records are used to prepare these reports.

An ideal time report will draw comparisons between the ideal time allotted for a task (by assuming that there were no interruptions or unplanned problems) and the actual time taken for that task (along with the reasoning of why that task took more or less time). This metric is useful for a company to measure its employee's productivity.

Example 15: An ideal time report would be used to analyze the optimal working conditions for your employee's productivity.

16. Abnormal Losses Report

The abnormal losses report is created by the manufacturing unit of the company. Abnormal losses include losses caused by accidents or carelessness. Abnormal losses may also happen because production costs increase. Material, labour, and storage facilities often contribute to the increased cost in production, leading to a decrease in profits. Some business owners insure their production facilities to mitigate the impact of abnormal losses due to natural disasters, fires, etc.

Example 16: A pandemic or a natural disaster might lead to abnormal losses during the financial term period.

17. Cost Reports

Various departments in the organization will prepare cost reports relevant to their operations. These cost reports provide different types of information to the managers. These reports also help your company's management to aggregate costs across departments and have clear insights into the total expenditure.

Example17: Reports include marketing cost reports and production cost reports.

18. Statistical Publications

Various kinds of statistical information are collected by an organization, both by published sources and unpublished ones.

These reports are helpful in decision making and control within an organization. Statics help organizations to gain deeper insights into the workings of their company.

Example18:A company may choose to measure the increase in the percentage of goods sold, as compared to the last quarter.

19. Orders in Hand Report

The marketing and sales division of your company will produce the orders report. This report will highlight the number of current orders to be fulfilled.

This report includes details like the invoice for sales, the orders received versus the inventory capacity, order quotes, and the exchange of items.

Orders in hand reports help a company to fulfill orders faster. It helps to avoid any chaos and confusion during product delivery, which improves customer satisfaction.

Example 19:A company may choose to outsource its delivery process if it gets too many orders in hand, more than their inventory capacity.

20. Other Reports

Other reports in MIS include statements like daily production statements and stock statements. MIS reports may be of types other than the ones mentioned in this list.

The company's business needs to determine the reports to be taken into account. MIS is a system that takes all these reports into accounts, consolidates them, and derives useful decisions out of them.

13.14 Components of an MIS

An MIS has five components. They are:

1. People
2. Data
3. Hardware
4. Software
5. Business Procedures

1. People: This includes professionals from every department, who input and record data and transactions, including executives who utilize MIS for decision-making.

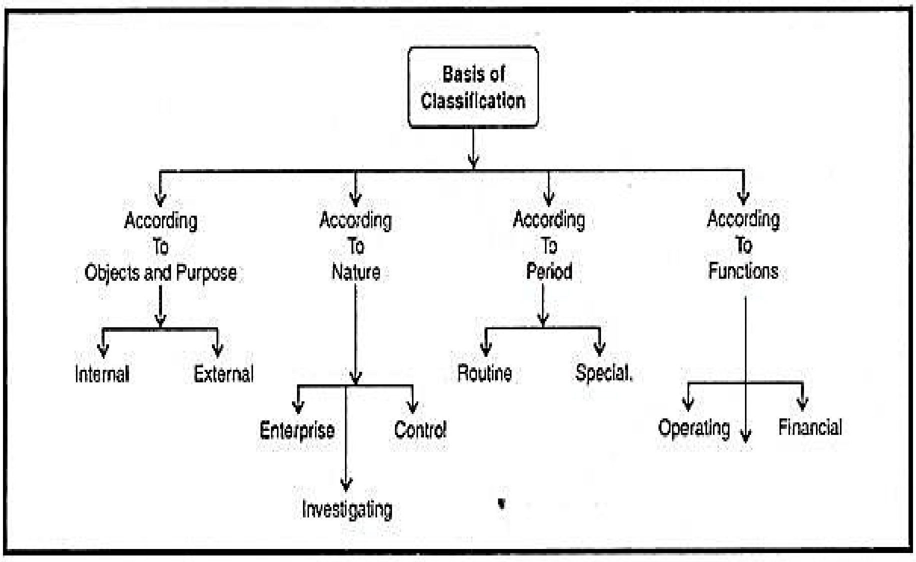
It also includes all the support staff that ensures that the software and hardware components are running smoothly.

2. Data: The raw data from each department like sales figures, salaries, purchase details, bills and receivables are a key component of an MIS. Accurate data is the bedrock of MIS reporting.

3. Hardware: Hardware components include all input and output devices used to feed data and display output. This includes keyboards, scanners, mice, monitors, printers and other network devices.

4. **Software:** This includes applications and computer programs that are part of the MIS. Some of the tools that are required by MIS include spreadsheets, databases and CRM (Customer Relationship Management) software.

5. Business procedures: This includes the practices adopted by a company and can differ from company to company. Within a company, two departments can set up different business procedures for MIS to address their specific functions, scope and goals.



1. Classification on the Basis of Object and Purpose

(a) External Reports: The reports prepared for external users or for the persons outside the business are known as external reports. External users may include shareholders, investors, creditors, suppliers and bankers.

The company publishes income statement and balance sheet at the end of every financial year and these statements are filed with the Registrar of companies and stock exchanges.

(b) Internal Reports: Internal reports refers to those reports which are meant for different level of management. Internal reports are not public documents and they are not expected to conform to any standards. These reports are prepared by keeping in view the needs of disposal for scanning them.

2. Classification on the Basis of Nature

(a) Enterprise Reports: These reports are prepared for the concern as a whole. These reports serve as a channel of communication with outsiders.

Enterprise reports may concern all activities of the enterprise or may be related to different activities. Enterprise reports may include balance sheet, income statement, income tax returns, employment report and chairman's report.

(b) Control Reports: Control reports deal with two aspects. One aspect relates to the personal performance and the other aspect deals with the economic performance.

The first type of reports are prepared and reported to judge performance of managers and heads of various responsibility centers.

The reasons for deviations in performance are also identified.

The second type of reports shows how well the responsibility centre has fared as an economic activity. Such analysis is made periodically. This type of analysis requires the use of full cost accounting rather than responsibility accounting.

(c) Investigating Reports: These reports are linked with control reports. In case some serious problem arises then the causes of this situation are studied and analyzed, investigative reports are based on outcome of special solution studies.

These reports are intermittent and are prepared only when a situation arises.

They are prepared according to the nature of every situation. They are helpful to the management in analyzing the causes of some problem.

3. Classification on the Basis of Period

(a) Routine Reports: These reports are prepared about day to day working of the concern. They are periodically sent to various levels of management. These persons may differ according to the nature of information about details to be reported so far as the timing is concerned they may be sent daily, weekly, monthly or quarterly

Example of two routine reports is:

1. Statement of Production

2. Statement of Expenses

(b) Special Reports: The management may confront some difficulties and routine report may not give sufficient information to tackle such situations.

Under such circumstances, special reports are called for. Special reports are required for special purposes only.

4. Classification of Reports on the Basis of Functions:

According to function the reports may be divided into two categories:

(a) Operating Reports

(b) Financial Reports

The operating reports may consist of the following:

(i) Control Reports:

These reports are used for management control purposes. They are intended to spot deviations from budgeted performance without loss of time so that corrective action can be taken. Control reports are also used to assess the performance of individuals.

ii) Information Reports:

These reports are prepared to provide useful information which will enable planning and policy formation for future. Information reports can take the form of trend reports and analytical reports.

Trend reports provide information in comparative form over a period of time. Graphic presentation can be effectively used in trend reports.

(b) Financial Reports:

These reports provide information about the financial position of the concern on specific dates or movement of finances during a specific period.

The Balance Sheet provides information about a concern on a specific date. On the other hand Cash Flow Statement provides data about the movement of cash during a particular period. These reports can be either static or dynamic.

Balance Sheet and other subsidiary reports are examples of static reports; Cash Flow, Fund Flow Statements and other reports showing financial position as compared to the budgeted are examples of dynamic reports.

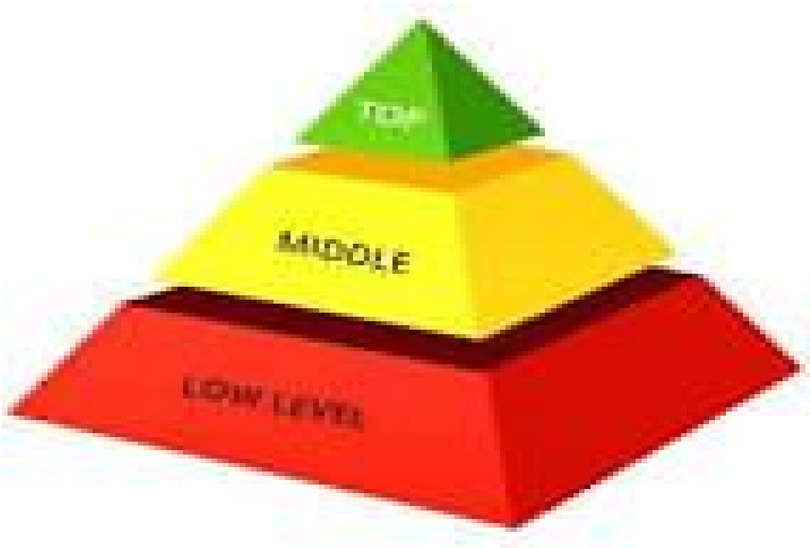
13.15 Levels of Management

The term **Levels of Management** refers to the line of division that exists between various managerial positions in an organization.

As the size of the company and workforce increases, the number of levels in management increases along with it, and vice versa.

The different Levels of Management can determine the chain of command within an organization, as well as the amount of authority and typically decision-making influence accrued by all managerial positions.

Levels of Management can be generally classified into three principal categories, all of which direct managers to perform different functions:-



1. Administrative, Managerial, or Top Level of Management
2. Executive or Middle Level of Management
3. Supervisory, Operative, or Lower Level of Management

1. Administrative, Managerial, or Top Level of Management:

This level of management consists of an organization's **board of directors and the chief executive or managing director**.

It is the ultimate source of power and authority, since it oversees the goals, policies, and procedures of a company. Their main priority is on the strategic planning and execution of the overall business success.

The roles and responsibilities of the top level of management can be summarized as follows:

- Laying down the objectives and broad policies of the business enterprise.
- Issuing necessary instructions for the preparation of department-specific budgets, schedules, procedures, etc.
- Preparing strategic plans and policies for the organization.
- Appointing the executives for middle-level management, i.e. departmental managers.
- Establishing controls of all organizational departments.
- Since it consists of the Board of Directors, the top management level is also responsible for communicating with the outside world and is held accountable towards an organization's shareholders for the performance of the enterprise.
- Providing overall guidance, direction, and encouraging harmony and collaboration.

2. Executive or Middle Level of Management

The **branch and departmental managers** form this middle management level. These people act as interlocutor between top and lower management.

The roles and responsibilities of the middle level of management can be summarized as follows:

- Executing the top level plans.
- Formulating middle level plans as sub plans.
- Hiring lower level of manpower
- Making lower level manpower aware with top plans.

- Reporting lower level performance.
- Evaluating the lower level performance.
- Inspiring motivating lower level management.

3. Supervisory, Operative, or Lower Level of Management:

This level of management consists of **supervisors, foremen, section officers, superintendents,** and all other executives whose work must do largely with HR oversight and the direction of operative employees.

The roles and responsibilities of the lower level of management can be summarized as follows:

- Assigning tasks and jobs to the concerned worker at this level.
- Guiding for day to day work.
- Overseeing both the quality and quantity of production.
- Maintaining good relations within lower levels of the organization.
- Helping to address and resolve the grievances of workers.
- Supervising and guiding their subordinates.
- Initiating training processes of their workers.
- Making available necessary materials to perform job.
- Making performance reports of the workers.
- Ensuring discipline and harmony.

Summary

- Management information is concerned with catering to the informational needs of all levels of management.
- Levels of management are broadly classified into three categories, Top Level, Middle Level and Lower Level.
- As one moves from bottom to top the structure of management becomes conical.
- It is far sure that the structure of management commands every principle of modern management.
- The decisions at top level are strategic, non-programmed and unstructured.
- The lower level of management focuses on execution.
- Management information system for its success relies on co-operation of everyone engaged in the state of affairs of the business.

Keywords

- **Strategy**: The plan made vis-à-vis SWOT of the business.
- **Programme**: Related to time factor.
- **Authority**: Giving the power (subordinating).Always flow from top to bottom.
- **Responsibility**: Becoming accountable. Always flow from bottom to top.

Self Assessment

1. Management information system can be synonymously reciprocating to

A. Authority

B. Responsibility

C. Both A & B

D. None of the above

2. Management information system is installed to

A. Target Employees

B. Create favourite

C. Evaluate the performance

D. Have Entity systemic information

3. There are classified -----levels of management.

A. 1

B. 2

C. 3

D. 4

4. As one moves upward to management hierarchy the decisions become more like:

A. Programmed

B. Non-programmed

C. Routine

D. Non-programmed and strategic

5. The pyramid of management hierarchy is shaped like

A. Cubical

B. Rectangular

C. Conical

D. Spherical

6. Control in management information system means:

A. To command

B. To be strict

C. To be authoritative

D. To ensure the things are as per standard

7. The secondin the order of management functions is:

A. Planning

B. Co-ordination

C. Organising

D. Controlling

8. The last in the order of management functions is:

A. Planning

B. Co-ordination

C. Feedback

D. Controlling

9. The quintessence of management information system is

A. Trailing
B. Forwarding
C. Proactive
D. Reactive

10. As one moves downward to management hierarchy the decisions become more like:
A. Programmed
B. Non-programmed
C. Routine
D. Non-programmed and strategic

11. Which level of management acts like interlocutor?
A. Top
B. Middle
C. Lower
D. It depends on the situation

12. Who is known as the father of management?
A. Peter Drucker
B. Philip Kotler
C. Henry Feyol
D. F.W Taylor

13.Who is known as the father of modern management?
A. Peter Drucker
B. Philip Kotler
C. Henry Feyol
D. F.W Taylor

14. Management information system is resultantly from the principle(s) of:
A. Division of work
B. Principle of authority and responsibility
C. Unity of Direction
D. All of the above

15. '*esprit de corps*' means:
A. High spirits
B. High company
C. Team spirit
D. None of the above

Answer for Self Assessment

1.	C	2.	D	3.	C	4.	D	5.	C
6.	D	7.	C	8.	C	9.	C	10.	C
11.	B	12.	A	13.	C	14.	D	15.	C

Review Questions

1. What is the Management Information System?
2. What are the Limitations of Management Information System?
3. "Management Information System is Successful only when one and all willingly co-operate". Discuss?
4. Can a business run without effective Management Information System?
5. Imagine if you are the Chief of Management Information System department then How will you fulfill this role of yours?
6. "The objective of Management Information System is not to let down someone but to enhance the efficiency of the System" .Discuss?

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Web Links

- https://icmai.in/upload/Students/Syllabus2016/Inter/Paper-10New.pdf
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Unit 14: Responsibility Accounting

CONTENTS

Objectives

In this unit, student will be able to understand:

- the meaning of Responsibility Accounting
- Pre-requisites of Responsibility Accounting
- Steps involved in Responsibility Accounting
- Advantages of Responsibility Accounting
- Limitations of Responsibility Accounting
- Types of Responsibility Centres in Responsibility Accounting

Introduction:

Modern business is very complex. There are seen gigantic business entities like big sized Limited Liability Partnerships (LLPs) and corporates. It is therefore necessary that the construct of delegation of authority and reciprocating responsibility should be among top management applied principles.Moreover, if the responsibility in very clear term is established for a particular business objective, then it would be a wonderful gesture for the business as a whole. On the same set, the model of responsibility accounting works when the organization, formally establish cost responsibility in cost center, revenue management in revenue center, profit targets in profit center, investment responsibility in established investment center.

In very simple terms the scenario of business becomes crystal clearly defined with the advent of responsibility accounting. There is due process followed in the installation of responsibility accounting in a particular business.

14.1 Responsibility Accounting –Meaning

Responsibility accounting is an accounting system that controls cost and revenue, by delegating responsibility to individuals or groups apportioned as responsibility centers. It aims to achieve minimum variance between actual and planned goals through the mechanism of established responsibility.Responsibility Accounting focuses on monitoring and controlling costs through personal responsibility within the organization.The focus in responsibility accounting is to manage persons rather than the product.

It is also called Profitability Accounting and Activity Accounting.

In simple words, the term Responsibility Accounting has got two words:

1. Responsibility

2. Accounting

It means that the responsibility of the person is mattering.

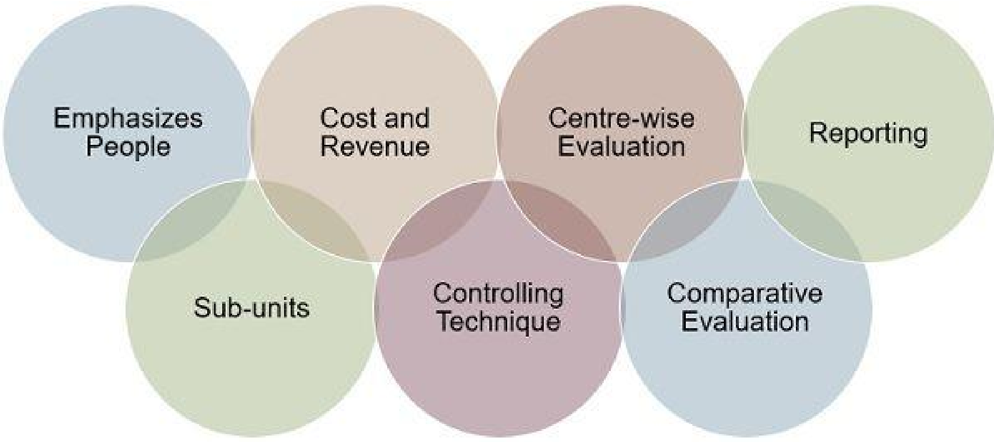
There should not be any doubt that the money is the base of the very existence of business. Every act is in the end measured in term of money.

This is the philosophy adopted when the responsibility (performance benchmark) is done through the concept of Responsibility Accounting and accounts are made on the basis of classified responsibility centers.

14.2 Objectives of Responsibility Accounting

The objective behind maintaining accounts by way of responsibility accounting is to:

- Examine the levels of responsibility.
- Bifurcate organizational objectives between departments.
- Create responsibility centres.
- Find out the contribution of the individual departments.
- Define accountability based on responsibility.
- Estimate the cost and revenue of the responsibility centres.
- Motivate departmental managers.



Emphasizes People: This concept emphasizes people over the product. Basis of evaluation is the responsibility assigned to centre managers.

Sub-units: The organization is sub-divided into manageable operational units called responsibility centres. Each of these centres has a responsible individual called the centre manager.

The manager of the concerned centre is responsible for the activities of that centre.

Cost and Revenue: Cost and revenue play a vital part in responsibility accounting.

Controlling Technique: It can also maintain control and discipline over the organization. The organization delegate authority through responsibility centres at all levels of management.

Centre-wise Evaluation: The responsibility accounting enables critical analysis for every responsibility centre.

Comparative Evaluation: The departments conduct a comparative evaluation of the actual with budgeted targets. That helps in estimating the responsibility of the centre manager.

Reporting: Higher authorities get a clear picture of the organization through responsibility reports.

14.3 Pre-requisites of Responsibility Accounting

1. Rational Budget:

The budget planned must be realistic. The performance evaluation is based on comparisons with these budgets.

2. Strong Organizational Structure:

The relationships in organizations must be clearly defined. The allocation of responsibility will largely depend on the organizational structure

3. Organizational Environment:

A healthy organizational environment is essential for a successful responsibility accounting.

4. Encouragement by Top Management:

The top management should be supportive and unbiased towards its employee. This leads to a motivated workforce and the successful application of responsibility accounting.

5. Involvement of All levels:

Here, all the levels of the organization from top to bottom are part of this accounting process. Responsibility calculations at each level of the organization enhance the overall performance.

6. Continuous Flow of Information:

An organization should have a constant flow of information, so that the budgeted objectives and essential information reaches the centres on time.

7. Self-motivated Team:

The responsibility accounting evaluates the human factor of the organization. The workforce must be self-motivated and dedicated to the work assigned to them.

Responsibility accounting is a management accounting system which analysis human resources. The evaluation is carried out based on the responsibility assigned to the manager.

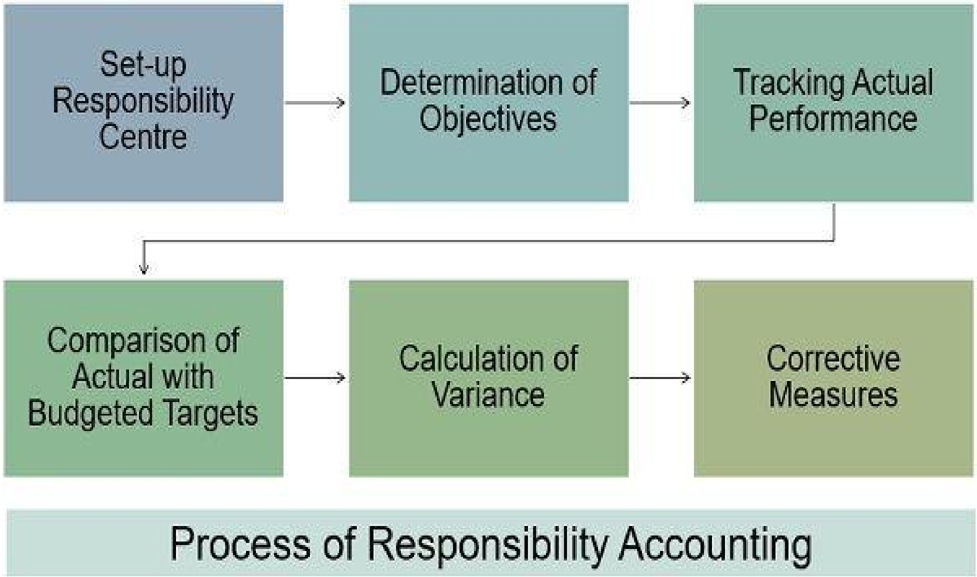
Various responsibility centres are created by dividing the organization into units. The four responsibility centres generally created are Cost, Revenue, Profit and Investment.

The organizations go for responsibility accounting to conduct detailed analysis at every level. The organization takes necessary corrective measures at an initial stage.

14.4 Steps Involved in Responsibility Accounting

In responsibility accounting, the firm splits into several responsibility centers. The employees are allocated the responsibility at each center.Comparing planned and actual performance evaluates the performance of that center. The center managers communicate results through responsibility reports.

Organizations can follow the series of steps discussed below for performing responsibility accounting:



1. Set-up Responsibility Centers:

The Investment, Profit and Cost centers are the sub-divisions of the firm. We refer to these divisions as responsibility centers. The authorities appoint a manager for every center. They are responsible for the performance of that center.

2. Determination of Objectives:

The objectives for each center are determined and conveyed to the center manager. It may consist of predefined standards, budgeted or planned targets.

3. Tracking Actual Performance:

The managers track and record the actual performances of their respective centers. Following this, they report their actual performance to the concerned authority.

4. Comparison of Actual with Budgeted Targets:

The authority conducts a detailed comparative analysis between the actual and budgeted.

5. Calculation of Variance:

After comparing the manager calculates, the variance between performance and standards.The differences are expressed in the form of favourable-unfavourable or positive-negative responsibility.

6. Corrective Measures:

In case, responsibility is unfavorable or negative, then authorities take necessary remedial measures. These measures help in improving responsible managers' performance.With these steps, the organizations can control costs and enhance revenues.

Finally, in Responsibility Accounting- the overall objective of the organization is to enhance the performance through an adopted mechanism of fixing responsibility (at each responsibility center).

14.5 Advantages of Responsibility Accounting

1. Responsibility Accounting facilitates cost planning and control.
2. Delegation of authority and responsibility to make managers more responsible is ensured in Responsibility Accounting.
3. It is helpful in maintaining organizational standards.
4. It enables prompt decision making by taking remedial actions on time.
5. It is an effective tool for motivation for the organization.

14.6 Limitations of Responsibility Accounting

1. The managers may find difficulty in classifying the costs under controllable and uncontrollable.

2. Required authority for assigned responsibility may not be provided.

3. Generating reports for each centre consumes plenty of time in communication and analysis.

4. Theconflict between departments may occur, when there is delegation of authority and responsibility.

5. Organizations must not rely entirely on this accounting system. Some areas must be needing extended enquiries and detailed investigation.

14.7 Responsibility Accounting-Responsibility Centers

The management accounting system focuses on achieving profitability and control by dividing the organization into minor divisions.These divisions are called responsibility centers and are headed by managers assigned to that center.

Responsibility Centers can be categorized as:

1. Cost Centre
2. Revenue Centre
3. Profit Centre
4. Investment Centre

1.Cost Centre

The cost or expense center looks after all the cost-related activities. The responsibility of the cost center manager is to control costs. The revenue part is excluded from this cost center.

The cost center in manufacturing units can be the service and production department.

For example, the maintenance and accounts department.

2. Revenue Centre

The revenue centermanager is responsible for generating sales revenue in the organization. They can control the expenses of the marketing segment but do not control the costs.

The duty of the revenue center manager is to look after the sales, promotion and product mix.

3. Profit Centre

A profit center aims at profit maximization by controlling costs and revenues. The profit center manager manages the production and marketing activities.

The managers try to reduce costs and increase revenue to maximize profits. For example, Branches of business in a different city.

4. Investment Centre

The manager heading the investment center is responsible for costs, revenue and investments. The department controls activity regarding acquisition and asset management.

The department also develops credit policies that impact debt collection in the organization.

Summary

The advent of responsibility accounting has got it in a contemplation that there has to clear cut specifically assigned responsibility functions namely, Cost, Revenue, Profit and Investment. The cost center is concerned with the cost control function, revenue center is concerned with the revenue optimization,profit center relies both on costcenter and revenue center to achieve the objective of profit maximization and finally the investment center is concerned with evaluation and best execution on the front of investment better spelled as 'investment decisions'.

Keywords

Responsibility: Making one accountable

Accountability: To be responsible

Responsibility Accounting: Making Accounting through established responsibility

Responsibility Centre: Establishing centers to delegate the specific authority viz. Cost, profit etc.

Self-Assessment

1. Which is not formally a responsibility centre?

A. Profit
B. Investment
C. Income
D. Cost

2. Which is/are formally responsibility centre(s)?

A. Profit
B. Investment
C. Income
D. Both A and B

3. The overall objective(s) of responsibility accounting is/are:

A. Business Efficiency
B. Business forecasting
C. Stakeholders' Management
D. Both A and B

4. The task input of profit centre comes from:

A. Cost Centre
B. Investment Centre
C. Revenue Centre
D. Both A and C

5. Investment Centre directly relies on

A. Cost Centre

B. Profit Centre

C. Revenue Centre

D. Both A and C

6. Investment Centre indirectly relies on

A. Cost Centre

B. Profit Centre

C. Revenue Centre

D. Both A and C

7. Assume the Cost Centre is headed by a bad manager, then how this thing will be detected. (You need to apply ONLY the advent of responsibility accounting)?

A. Cost centre

B. Revenue centre

C. Profit centre

D. All of the above

8. Assume the Revenue Centre in headed by a bad manager, then how this thing will be detected. (You need to apply ONLY the advent of responsibility accounting)?

A. Cost centre

B. Revenue centre

C. Profit centre

D. All of the above

9. Assume the Profit Centre in headed by a bad manager, then how this thing will be detected. (You need to apply ONLY the advent of responsibility accounting)?

A. Cost centre

B. Revenue centre

C. Investment centre

D. All of the above

10. Which of the following is not a limitation of responsibility accounting?

A. Extended enquiry

B. Establishment of absolute responsibility

C. Human bias may creep

D. None of the above

11. Which of the following is/are limitation of responsibility accounting?

A. Extended enquiry

B. Establishment of absolute responsibility

C. Human bias may creep

D. All of the above

12. Which of the following is not a link in the chain of responsibility accounting?

A. Setting targets

B. Comparing performance

C. Production

D. Corrections

13. Which of the following is/are link(s) in the chain of responsibility accounting?

A. Setting targets

B. Comparing performance

C. Corrections

D. All A,B and C

14. The Chief Executive Officer (CEO) is part of which responsibility Centre(s)?

A. Cost centre

B. Revenue centre

C. Investment centre

D. All of the above

15. The most Important principle of modern management which governs responsibility accounting is/are:

A. Duplication of work

B. Division of labour

C. Remuneration

D. Authority and responsibility relationship

Answers for Self Assessment

1.	C	2.	D	3.	D	4.	D	5.	B
6.	D	7.	C	8.	C	9.	C	10.	D
11.	D	12.	C	13.	D	14.	D	15.	D

Review Questions

1. What is responsibility accounting? Discuss limitations of responsibility accounting?
2. Write a detailed note on responsibility centres.
3. Differentiate between cost centre and profit centre?
4. Discuss in detail the process of responsibility accounting?
5. What are the advantages of responsibility accounting?

Further Readings

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