

# **Management Control Systems**

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## **DMGT514**

**Edited by:**  
**Pooja**



**L**OVELY  
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# MANAGEMENT CONTROL SYSTEMS

Edited By  
Pooja

Printed by  
**EXCEL BOOKS PRIVATE LIMITED**  
A-45, Naraina, Phase-I,  
New Delhi-110028  
for

Lovely Professional University  
Phagwara

## **SYLLABUS**

### **Management Control Systems**

**Objectives:** To provide knowledge, insight & analytical skills related to how a corporation's senior executives design & implement the ongoing management systems that are used to plan & control the firm performance

Sr. No.	Description
1.	<b>Management Control System:</b> Nature and Basic concepts, Strategic Management framework
2.	Behaviour in Organisations
3.	<b>Responsibility Centers:</b> Revenue, Expense and Profit Centers. Measuring and Controlling Assets employed.
4.	<b>Transfer Pricing:</b> Objectives, Methods & Administration
5.	Strategic planning for management control
6.	Budgeting as a tool for Management Control. Management Control through variance analysis
7.	Performance Measurement Systems and Interactive Control
8.	Management Compensation as a tool for Management Control
9.	Management control for differentiated strategies
10.	Management control of Service organisation & MNC's

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## **Unit 1: Introduction to Management Control System**

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- 1.8 Review Questions
- 1.9 Further Readings

### **Objectives**

After studying this unit, you will be able to:

- Explain the meaning of management control system
- Discuss the basic concepts involved in management control system
- Recognize the nature of management control system
- Identify the process of management control
- Explain the scope of management control system
- Discuss boundaries of management control

### **Introduction**

The importance of the subject matter covered in the courseware has been felt on the collapse of companies such as Tyco, Global crossing, WorldCom, and Enron because of the lapse in controls. CEO and top management compensation in these companies were so heavily tied up with stock options that executives were motivated to manipulate financials to buoy the short-term stock price. Similarly long-term success of world class companies such as Emerson electric, Lincoln Electric, New York Times, Worthington Industries, 3 M Corporation, Nucor Corporation, Dell Computer, Wal-Mart, South West Airlines, Cisco Systems and Analog Devices were not just because they have developed good strategies, but more importantly, they have designed systems and processes that energize their employees to execute these strategies effectively.

Notes

## **1.1 Meaning of Management Control System**

A Management Control System (MCS) is a system. A system can be described as a series of steps or phases consisting of an input phase, a processing phase, and an output phase. A control system adds measurement, analysis and reporting phases to the system. Accounting methods are often implemented and evaluated as part of a management control system. To control financial activities within a company, the area may be broken down into financial and managerial accounting. Financial accounting generally focuses on internal issues, such as reporting sales costs, while managerial accounting may focus on methods for determining product costs.

While both areas cover business accounting issues, their methods of application generally differ, and separate systems implemented by a management control system may aid in ensuring reports remain accurate and impartial. Managerial accounting is typically responsible for providing management with information on controlling costs and improving the production process. Managerial accountants may also provide cost information on new products, make pricing decisions and monitor actual and budgetary costs.

General financial accounting within management control systems aims to focus on a company's internal accounting issues. Financial accounting typically handles payroll and human resource issues affecting employees within the company. Accounts in this area may also manage employee costs and reimbursements under a control system.



*Notes* An MCS is a set of interrelated communication structures that facilitates the processing of information for the purpose of assisting managers in co-coordinating the parts and attaining the purpose of an organization on a continuous basis. All organizations use control system both formal and informal. A system is an aggregate of machines and people that work toward a common objective.



*Caution* Output is measured, compared against a plan, analyzed if judged significant, and then reported back to the appropriate earlier phases of the system in the form of positive or negative reinforcement.

In a management control system, data/information is typically fed back to managers of the various system phases. Responsible managers will then take appropriate action based on the data/information provided.

## **1.2 Nature**

The role of the management is to organize, plan, integrate and interrelate organizational activities to achieve organizational objectives. The achievement of these activities is facilitated by management control systems. Management control, of course, is a core business function and exists as a separate, well-established discipline within the management field. Management Control Systems (MCS) theory is a useful integrative tool for organizing, explaining, and understanding the jargon and concepts of performance measurement. Management control systems consist of all organization structures, processes and subsystems designed to elicit behavior that achieves the strategic objectives of an organization at the highest level of performance with the least amount of unintended consequences and risk to the organization.



**Notes**

*Notes* A management control system is designed to assist managers in planning and controlling the activities of the organization. A management control system is the means by which senior managers ensure that subordinate managers, efficiently and effectively, strive to attain the company's objectives.

Every MCS has certain generic components. There must be a reliable performance measurement system. Realistic standards should be planned and maintained. The standards should be consistently and regularly compared with performance measurement data. Any variances that exceed predetermined thresholds should be enthusiastically investigated and reported to the people who have responsibility and authority to make appropriate and timely adjustments. All adjustments should be controlled, especially any adjustments that affect predetermined standards and thresholds. If the management monitors the activities of the business units frequently, then it is exercising tight control. Limited monitoring of the business units' activities can be termed as loose control.

The difference between tight and loose control thus relates to the degree to which the management monitors the activities of a unit. When there is tight control by the management, there is extensive involvement of the management in the day-to-day operations of the business unit. The budget is considered a binding constraint with a strong emphasis on meeting the budgeted targets. Deviations from the budget are generally not considered acceptable. Loose control is characterized by limited involvement by the management in day-to-day operations. Under loose control, the budget is regarded more as a tool for planning and communication than as a binding commitment.



*Did u know?* Management control systems involve a number of activities in an organization, including:

- Planning the future course of action;
- Coordinating and communicating the various activities of the organization to different departments;
- Evaluating information and deciding the various activities; and finally,
- Influencing people to work in accordance with the goals of the organization.

However, nature of management control system is concerned with three words management, control and systems.

### **1.2.1 Management**

An organization consists of a group of people who work together to achieve certain common goals (in a business organization an important goal is to earn a satisfactory profit). In an organization you have hierarchy of managers, with the Chief Executive Officer (CEO) at the top, the managers of the business units, departments, sections and other sub units below the CEO. Depending on the size and complexity of the organization, there may be several layers in the hierarchy. Except for CEO, each manager is both a superior and a subordinate. Each one supervises people in his own organization unit and is a subordinate of the manager to whom he reports.

The CEO (or in some organization, a team of senior managers) decides on the overall strategies that will enable the organization to meet its goals. Subject to the approval of the CEO, the various business and managers formulate additional strategies for their respective units to

- Notes** further these goals. The management control process is the process by which managers at all levels ensure that the members of the organization implement these strategies.
- The Management Control Process is more complicated than what has been described in detectors, assessors, effectors and a communication system. These are as follows:
1. ***The standard is not preset:*** Rather it is a result of conscious planning process where management decides what the organization should be doing and as part of control process it is also comparison of actual with these plans.
  2. ***Like controlling an automobile, management control is not automatic:*** Some of the detectors are mechanical (i.e. routine comparison of actual with standard), but important information is detected through the managers' own eyes, ears and other senses (specially the judgment whether the difference between actual and standard performance is significant to warrant action). Action taken to change organizations behaviour involves human beings.
  3. Unlike controlling an automobile (a function performed by a single individual), management control requires co-ordination among individuals. An organization consists of many separate parts and management control must ensure that each part works in a harmony with the others.
  4. The connection from perceiving the need for action and the action required to obtain the desired result may not be clear. In the function, as an assessor manager may decide that "costs are too high" but there is no easy or automatic action or a series of action that will bring costs down to what the standards say.
  5. Control in an organization does not come about solely or even primarily as a consequence of actions. Much control is self control i.e. people act in the way they do, not primarily because they are given specific instructions by their superiors, rather their own judgment tells them what action is appropriate.

### **1.2.2 Control**

The control process is similar to control process in an automobile. In an automobile if an accelerator is pressed it goes faster, when the break pedal is pressed it slows or stops, when the steering wheel is rotated it changes its direction. With these devices, the driver controls the speed and direction of the vehicle. If any of these devices does not work, the automobile will be out of control.

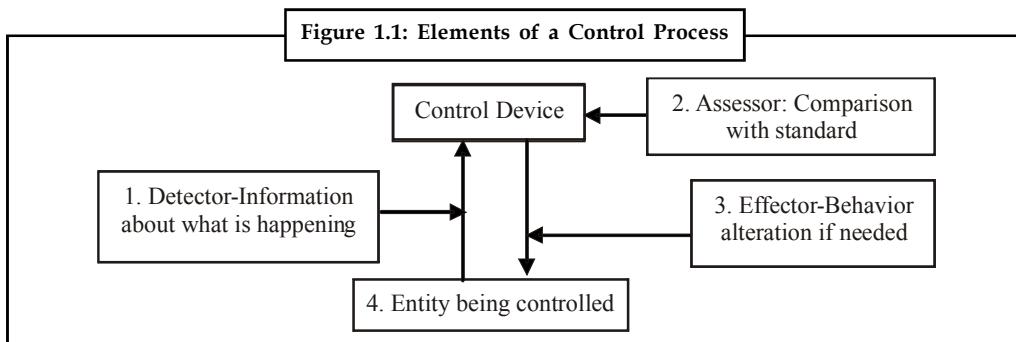
An organization must also be controlled i.e. there must be devices to ensure that it goes where the leaders want it to go. But control in an organization is much more complicated than controlling a vehicle.

Every control system has at least four elements:

1. A detector or sensor - a device that measures what is actually happening in the situation being controlled.
2. An assessor i.e. a device for determining the significance of what is happening i.e. comparison with some standard or expectation.
3. An effector i.e. a device that alters behaviour if the assessor indicates the need. This device is often called "feedback."
4. A communication network, i.e. devices that transmit information between the detector and the assessor and between the assessor and the effector.

These four basic elements of any control system are given in Figure 1.1.

Notes



Further consider a situation of an automobile driver of a highway where the speed limit is 65 kph. The control system in this case acts as follows:

1. The eyes (sensors) measures actual speed by observing the speedometer
2. The Brain (assessor) compares actual speed with desired speed and upon detecting a deviation from the standard
3. Directs the foot (effector) to ease up or press down on the accelerator and
4. The nerves from the communication system that transmits information from eyes to brain and brain to foot.

It would be seen that regulation of a car is a complicated since there can be no certainty as to what action the brain will direct after receiving and evaluating information from the detector.



*Example:* Once the driver determines the actual speed exceeding 65 km per hour, some drivers wanting to stay within the legal limit will ease up on the other while others, for any number of reasons will not. In this situation, control is not automatic, one would have to know something about the personality and circumstances of the driver to predict what the actual speed of the automobile would be at the end point of the process.

### 1.2.3 System

A system is a prescribed way of carrying out an activity or set of activities, usually the activities are repeated. Most systems are less precise than computer programs, their instructions do not cover all eventualities and the user of the system must make judgments when these eventualities occur. Nevertheless, a system is characterized by more or less rhythmic, recurring, co-ordinated series of steps that are intended to accomplish a specific purpose.

### Self Assessment

Fill in the blanks:

1. A .....is an aggregate of machines and people that work toward a common objective.
2. In a ....., data/information is typically fed back to managers of the various system phases.
3. A system is an aggregate of ..... and ..... that work toward a common objective.

- Notes**
4. Output is ..... and ..... against a plan.
  5. Every control system has at least four elements, viz. ...., ...., .... and a .....
  6. The controller's main responsibility is to ensure that the systems throughout the organization are ..... and compatible with one another.
  7. Information system should be properly designed and managed by the .....

### **1.3 Basic Concepts**

A control system is a set of formal and informal systems to assist the management in steering the organization towards its goals. Controls help in guiding employees effectively towards the accomplishment of the organization's goals. Establishing a control system in an environment of distributed accountability, reengineered processes, and local autonomy and empowerment is a challenging task.

#### **1.3.1 Important Features of Management Control Systems**

##### **Nature of Decisions**

Management control decisions are based on the framework established by the organization's strategies. Management control decisions also take into account the quantity and quality of resources available. Within the constraints of the available resources and the policies of the organization, a manager should be able to implement activities that are best suited for a particular business unit.

Decisions are made at the highest level, but their actual implementation may require some time. For instance, employees need time to adapt to a new technology.

##### **Decisions are Systematic and Rhythmic**

Decisions in management control process are systematic and rhythmic i.e. they are in accordance with the strategies and procedures laid down by the top management. Plans developed for a unit must encompass the whole organization, and the plans for each of the organization's units must be coordinated with one another, so that there is a balance between different activities. For example, operations and distribution should be balanced with the sales program.

##### **Strategy Implementation Tool**

Management control helps an organization to move towards its strategic objectives. It is an important vehicle for the execution of strategy. It explains how strategies are implemented through management controls, organizational structures, human resource management, and culture. Effective execution can take place with the help of an efficient organizational structure, human resource management and culture. All these are influenced by the system of management control, and hence it is an important aspect of strategy implementation.



**What are the categories that correspond to the generic MCS components?**

The criteria are organized into five categories that correspond to the generic MCS components. The five categories are: Organization, Planning and Budgeting, Accounting, Analysis, and Revisions/Access.

## **Self Assessment**

## **Notes**

Fill in the blanks:

8. In case of ..... performance, there is feedback to the responsibility center in the form of praise or other reward.
9. Strategic planning occurs at ..... management levels; task control at the ..... levels in the organization and management control is in .....
10. Although systematic, the management control process is not .....
11. Management control system includes both ..... and ..... performance measures.
12. ..... control calls management attention to organizational developments.

## **1.4 Impact of the Internet on Management Control**

The pace of information revolution accelerated with the invention of the computer, is gaining momentum in the 1990s with the advent of the Internet.

The Internet provides major benefits in the following ways:

1. **Instant access use:** On the web, the huge amount of data can be sent to anyone anywhere in the world in a matter of seconds.
2. **Multi-targeted communication:** The Internet has a vastly expanded one-to-many reach; one web entry can reach millions of people.
3. **Costless communication:** Communication with customers via the internet avoids the costs of salaries of telephone operator.
4. **Ability to display images:** The Web enables the customers to see the products being offered for sale.
5. **Shifting power and control to the individual:** The individual is the "king". Consumers are in control and can use the web 24 hours a day at their own conveyance without being interrupted or unduly influenced by sales representatives or telemarketers.

With these changes, the Internet has changed the rules of the game in the business – to individual custom sector.



*Example:* In July 1995, Amazon.com began offering books for sale on its website and the customers need not visit the bookstores for purchasing books.

The Internet has also changed business-to-business commerce.



*Example:* Companies have used the Internet to reconfigure their relationships with corporate customers. Cisco's website allows customers to configure products with complex features with its "intelligent configuration" software rejecting orders where specific components would be incompatible with other parts.

The impact of the Internet on the world of business has been significant. Management control systems involve information, and organizations require an infrastructure to process that information. The Internet provides that infrastructure making the processing of information easier and faster with fewer errors. On the web, a manager can collect huge amounts of data, store that data, analyze it in different forms and send it to anyone in the organization. Managers can also use this information to customize and personalize their reports.

<b>Notes</b>	The Internet facilitates co-ordination and control through efficient and effective processing of information but the internet cannot substitute for the fundamental process that is involved in management control, i.e., the judgements required to design and operate in Optimal Control System. Such judgements involve:
	<ol style="list-style-type: none"><li>1. Understanding the relative importance of the various and sometimes competing goals that drive individuals to act e.g. personal achievement versus collective achievement, value creation for customers and shareholders rather than oneself.</li><li>2. Aligning various individual goals with those of the organization.</li><li>3. Developing specific objectives by which business units, functional areas and individual departments will be appraised.</li><li>4. Communicating strategy and specific performance objectives throughout the organization.</li><li>5. Determining the key variables to be measured in assessing an individual's contribution to strategic goals.</li><li>6. Evaluate actual performance relative to the standard and making inferences as to how well the manager has performed.</li><li>7. Conducting productive performance review meetings.</li><li>8. Designing the right reward structure.</li><li>9. Influencing individuals to change their behaviours.</li></ol>

In sum, though the Internet has vastly improved information processing, the fundamental elements of management control – what information to collect and how to use it – are essentially behavioural in nature and thus, not amenable to a formula approach.

### **Self Assessment**

Fill in the blanks:

13. The planning process is more important in ..... while the control process is more important in .....
14. Management Control does not necessarily mean that actions should correspond to a .....
15. Designing of the system is to be carried out after considering the ..... requirements of different levels of management.
16. The strategic plan is converted to an annual budget that focuses on the planned revenues and expenses for individual .....
17. ..... refers to the set of common beliefs, attitudes and norms that explicitly or implicitly guide managerial actions.

### **1.5 The Domain of Management Control System**

There is a difference of opinion about the proper domain of control systems among experts in the field. There are many views: Antony and Govindarajan in their book "*Management Control System*", Eleventh Edition, consider strategic planning, management control and task control as three separate interrelated process of planning and control. Management control is seen by them as the process by which managers influence the other members of the organization to implement the organization strategies. In their views, the proper domain for management

control system is the successful implementation of strategy. They do not consider adaptation and innovation as an integral part of the Management Control Process.

## Notes

William Newman in his book *Constructive Control Design and Use of Control Systems*, considers the domain of control systems to be the control function of management and believes that "control is one of the basic phases of managing along with planning, organizing and leading." Control is seen as an essential part of the management process and a part of all the managerial efforts of an organization.

Stafford Beer in his two books, *Cybernetics and Management*, and *Decision and Control*, Katz and Kahn in their important work Social Psychology of organizations and Griesinger in his paper "Towards a Cybernetic theory of the firm", have viewed the entire organization as a Control System. "Control" is seen as a characteristic or attribute of a Control System, it occurs when the organization is attaining its purpose. Purpose and attainment of purpose are central to the work of control system.

Joseph A. Maciarello and Calvin Kirvy in their book *Management Control System*, 2nd Edition, defines management control both as the control of strategy and the control of operations. Moreover, as it is concerned with the design of management systems used to steer organization towards its purpose, it includes the aspects of the planning, organizing and leading the functions of management, thus, distinguishing it from Newman's definition. It describes a management control framework which, when implemented will enhance organizational adaptability and thus, accelerate productivity and quality improvements. The framework is a part for resolving inadequacies in current control system, for making organization work towards optimal performance and for enhancing competitiveness.

## Self Assessment

### Multiple Choice Questions:



Case Study

MCS at Little Friends Electronic Corporation

**L**ittle Friends Electronic Corporation, USA, was a defense contractor, which had dealt with Canada's defense department on several occasions. John Martins, president of the corporation, went to Canada for a meeting with top authorities of the defense department. At the meeting, the secretary of the defense department made a speech emphasizing the need for tighter control by defense contractors, especially at a time of inflation. The secretary said that the defense department had decided to pay more attention to the management practices of its defense contractors, and would consider favourably only those companies which had effective control systems. On his return to the US, Martins briefed his Vice President (administration) on the secretary's speech. He asked the Vice President to install an effective control system in the company. The Vice president turned to corporate controller asking him to make arrangements to install an effective control system. The controller met his staff assistant and ordered him to search for space literature that would guide them in installing an effective control system. He asked his assistant to submit a report on his work within a week.

Contd...

At the end of the week, the assistant came back to the controller saying that he was not able to find literature pertaining to control systems although he had reviewed dozens of books and journals. The controller was unhappy with this excuse as he had to submit a report to the vice president the next day.

**Notes**

**Questions**

1. Do you think the staff assistant's approach to finding literature on installing a control system is right? Support your answer with reasons.
2. If you were the staff assistant, what would your suggestions, for an effective control system be?

## **1.6 Summary**

- Management control system is an important system which is set of interrelated communication structure which facilitates the purpose of an organization on a continuous basis.
- In controlling the organization the leader or manager plays vital role.
- The management control process is the process by which managers at all levels ensure that the members of the organization implement the departmental strategies to achieve the goals.
- Every control system has at least four elements, viz. a detector or sensor, an assessor, an effector and a communication network.
- Management Control does not necessarily mean that actions should correspond to a plan such as budget.
- Management control systems consist of all organization structures, processes and subsystems designed to elicit behavior that achieves the strategic objectives of an organization at the highest level of performance with the least amount of unintended consequences and risk to the organization.
- It has to be remembered that the control is not automatic and one has to understand the entire persona of the organization in order to control effectively.

## **1.7 Keywords**

**Cybernetics:** A term used for service of communication and control in Management control system.

**Goal Congruence:** It is a goal of an organization where the goals of individual members are consistent with those of the organization itself.

**Management Control Systems (MCS):** A MCS is a set of interrelated communication structures that facilitates the processing of information for the purpose of assisting managers in coordinating the parts and attaining the purpose of an organization on a continuous basis.

**Task Control:** It is an efficient and effective performance of individual task.

## **1.8 Review Questions**

1. After going through the unit, what do you analyse as the characteristics of a management control system?

- Notes**
2. Can you give a sketch of the formal management control process?
  3. Discuss the nature and scope of the management control process making appropriate reference in your answer to:
    - (a) Organizational structure
    - (b) The planning and control function of management
    - (c) The principle of management by exception
  4. What is the role-played by accounting system and information handling systems in the formal management control process?
  5. One of the criticisms frequently leveled at industrial management is that although control systems are introduced into units, these are rarely integrated with one another. Discuss the statement in the context of goal congruence.
  6. What do you analyse as the impact of the internet on the Management Control?
  7. How do you describe formal aspects of management control systems to include a generic set of five mutually supportive management subsystems?
  8. Examine the role played by informal control process in the development of management control system.
  9. Do you approve of disagreements about the domain of management control systems exist between different experts in the field? Why/why not?
  10. Control systems play an important role in service as well as manufacturing organizations. Do formal and informal systems play an important role in a hospital? What steps should the hospital management take to ensure the effective implementation of management control system?

### **Answers: Self Assessment**

- |  |  |
|--|--|
| 1. System  | 2. Management control system           |
| 3. Machines, People  | 4. Measured, Compared                  |
| 5. a detector or sensor, an assessor, an effector, communication network |  |
| 6. Efficient   | 7. Professionally trained person       |
| 8. Satisfactory  | 9. Top, lowest, between                |
| 10. Mechanical   | 11. Financial, non-financial           |
| 12. Interactive  | 13. strategy formulation, task control |
| 14. plan   | 15. information                        |
| 16. responsibility centers   | 17. Culture                            |
| 18. (a)  | 19. (a)                                |
| 20. (a)  | 21. (b)                                |
| 22. (c)  | 23. (a)                                |
| 24. (b)  | 25. (d)                                |
| 26. (b)  | 27. (a)                                |

## **1.9 Further Readings**

**Notes**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House.



*Online links*

[ynaweb.dti?dynasection=subsidiaries&dynapage=managementcontrolsystems](http://ynaweb.dti?dynasection=subsidiaries&dynapage=managementcontrolsystems)

<http://www.jnbs.com>

<http://www.scribd.com/doc/13822327/Management-control-system>

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## Unit 2: Strategic Management Framework

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    2.3.3 Tools for Implementing Strategy

2.4 Task Control/Operational Control

    2.4.1 Distinction between Task Control and Management Control

2.5 Formal Control Process and Role Played by Accounting Systems and Information Handling System

2.6 Summary

2.7 Keywords

2.8 Review Questions

2.9 Further Readings

### Objectives

After studying this unit, you will be able to:

- Discuss the strategic formulation
- Identify the distinction between strategy formulation and management control
- Identify the distinction between task control and management control
- Construct the management control environment
- Explain the concept of strategy
- Describe the management and control structures

### Introduction

Management Control Systems are tools to implement strategies. Strategies differ between organizations and controls should be tailored to the requirements of specific strategies. Different strategies require different task priorities, different key success factors and different skills, perspectives and behaviours.

Management Control is one of the several types of planning and control activities in an organization. The other two control and planning activities are: (a) strategic planning and (b) task or operational control.

## 2.1 Strategic Planning

Notes

Strategic planning occurs at top management levels; task control at the lowest levels in the organization and management control is in between.

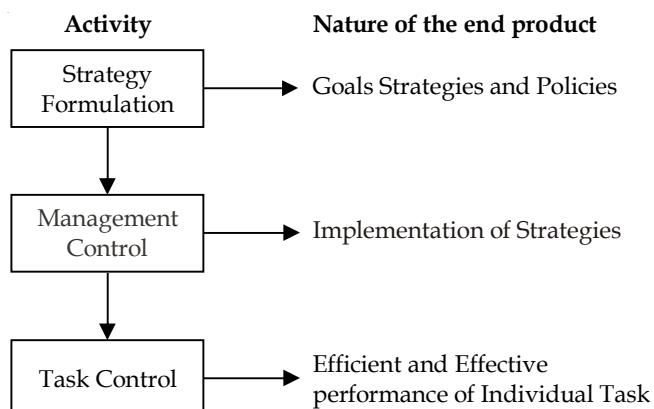
Strategic planning focus on long range planning is least systematic; uses the rough approximation of the future. Whereas, task control focus on short runs operating activities, is most systematic; uses accurate current data. Management control is in between.



*Did u know?* Each activity involves both planning and control, but the planning process is much more important in strategy formulation; the control process is much more important in task control and the planning and control are of approximately equal importance in management control.

The relationship of these activities is given below:

**Figure 2.1: General Relationship among Planning and Control Functions**



### **Self Assessment**

Fill in the blanks:

1. .... focus on long range planning is least systematic; uses the rough approximation of the future.
2. .... is one of the several types of planning and control activities in an organization.

## 2.2 Strategic Formulation

Strategic formulation is the process of deciding the goals of the organization and the strategies for attaining these goals. Goals describe the broad overall aims of the organization and the term objectives describe specific steps to accomplish the goals within a given timeframe.



*Notes* Goals are timeless, they exist until they are changed and they are changed only rarely. Earning a satisfactory profit or more specifically, a satisfactory return on investment is an important goal, in others, attaining a large market share is a goal.

<b>Notes</b>	An organization may select any ways of seeking to attain its goals e.g., if goal is profitability, the organization may select one or more product lines; territories or to focus on marketing goods produced by other manufacturers etc.  Strategies are big, important plans which state the direction in which senior management wants the organization to be heading to. They are timeless - that is, they exist until they are changed.  The need for formulating strategies arises either in response to a perceived threat (e.g. market inroads by competitors, a change in customer taste or new government regulation) or to take advantage of a perceived opportunity (e.g. opportunities of technical innovations, or development of new applications for existing products).
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### **2.2.1 Distinction between Strategic Formulation and Management Control**

1. Strategic formulation is essentially unsystematic. Whenever a threat is perceived or when a new idea surfaces, strategic formulation takes place. By contrast, the management control process takes place according to a more or less fixed timetable and the steps occur one after another.
2. Strategic formulation involves only part of the organization; it may result in a change in one or a few existing strategies. The management control process, necessarily involves the whole organization and more important various parts are co-ordinated with one another.
3. Analysis of a proposed strategy usually, involves relatively few people - the sponsor of the idea, headquarters staff and senior management. By contrast, the management control process involves managers and their staff at all levels in the organization.
4. Because relatively few people are involved in strategic formulation, communication among them is relatively simple. In the management control process, many more people are involved and communication, therefore, is much more complicated.
5. Behavioural considerations are less important in the strategic formulation process. In the management control process, managers interact with one another and behavioural considerations are very crucial.

### **Self Assessment**

Fill in the blanks:

3. ..... is the process of deciding the goals of the organization and the strategies for attaining these goals.
4. ..... considerations is less important in the strategic formulation process.

### **2.3 Management Control**

Management control is the process by which managers influence other members of the organization to implement the organization's strategies. Several aspects of the process are given below:

### **2.3.1 Management Control Activities**

**Notes**

It involves a variety of activities including:

- Planning what the organization should do
- Co-ordinating the activities of several parts of the organization
- Communicating information
- Evaluating information
- Deciding what, if any, action should be taken
- Influencing people to change their behaviour



*Notes* Management Control does not necessarily mean that actions should correspond to a plan such as budget.

The stated plans were based on situations prevailing both inside and outside the organization at the time of formulation of the plan.



*Caution* If the circumstances have changed, planned action may no longer be appropriate.

Management control involves anticipating future conditions in order to ensure that the organization's objectives are attained. If the management discovers a better approach – one more likely than the predetermined plan to achieve the organization's goals – the management control system should not obstruct its implementation. In certain cases the manager may be required to obtain approval for such deviation.

### **2.3.2 Goal Congruence**

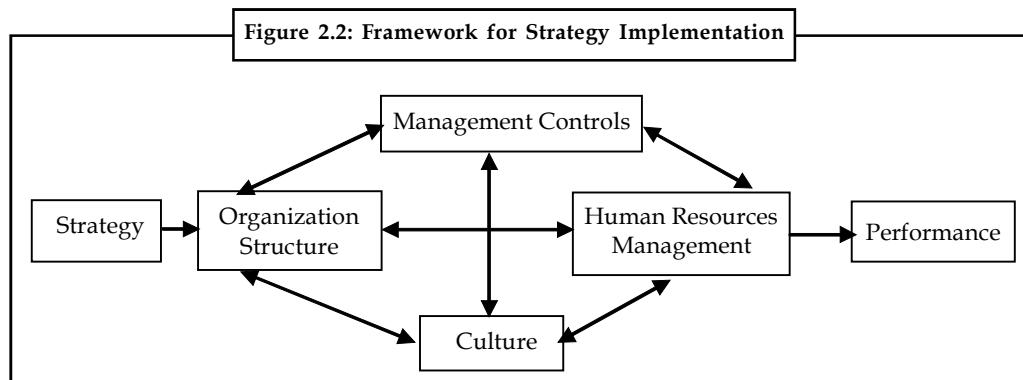
Although systematic, the management control process is by no means mechanical; it involves interactions among individuals, which cannot be described as mechanical. Managers have personal as well as organizational goals. The central control process is to induce managers to act in pursuit of their personal goals in ways that will help attain the organization's goals as well. Goal congruence means that as far as feasible, the goals of an organization's individual members should be consistent with the goals of the organization itself. The management control system should be designed and operated with the principles of goal congruence in mind.

### **2.3.3 Tools for Implementing Strategy**

Management Control Systems help managers move an organization towards its strategic objectives. Thus, Management Control focuses primarily on strategy implementation.

Management controls are only one of the tools managers use in implementing desired strategies. Strategies can be implemented through the organization structure, its management of human relations and its particular culture. These are shown in Figure 2.2.

Notes



**Organization structure** specifies the roles, reporting relationships and divisions of responsibilities that shape decision-making in an organization.

**Human resources management** is the selection, training, evaluation promotion and termination of employees so as to develop the knowledge and skills required to execute organizational strategy.

**Culture** refers to the set of common beliefs, attitudes and norms that explicitly or implicitly guide managerial actions.

**Financial and non-financial emphasis:** Management control system includes both financial and non-financial performance measures. The financial dimension focuses on the monetary "bottom line" – net income after tax, return on equity and so forth. But there are non-financial objectives as well such as product quality, market share, and customer satisfaction, on time delivery and employee morale.

**Aid in developing new strategies:** As discussed earlier, the primary role of management control is to ensure execution of chosen strategies. In industries where environment is changing rapidly, management control information especially of non-financial nature can provide a basis for considering new strategies. This is known as interactive control.



**Notes** Interactive control calls management attention to developments – both negative (e.g. loss of market share, customer complaints) and positive (e.g. the opening of a new market because of elimination of govt. regulations) that indicate the need for new strategic initiatives.

## Self Assessment

Fill in the blanks:

5. Management control is the process by which managers influence other members of the organization to implement the organization's .....
6. ..... means that as far as feasible, the goals of an organization's individual members should be consistent with the goals of the organization itself.

## **2.4 Task Control/Operational Control**

**Notes**

Task control is the process of assuring that specific tasks are carried out effectively and efficiently.

Task control is transaction oriented i.e., it involves the control of individual tasks. Rules to be followed in carrying out these tasks are prescribed as part of the management control process. Numerically controlled machine tools, process control computers and robots are task control devices. Human beings are used in these tasks only if they are less expensive than computers or other control devices.

Many task control activities are scientific, that is, relationship between cause and effect is known within acceptable limits, systems exist for various types of tasks and each is structured to meet the requirements of a specific type of task e.g. procurement system, scheduling systems, order entry systems, logistic systems, quality control systems, cash management systems and many others.

Certain activities that once were performed by managers are now automated and hence, become task control activities. The shift from management control to task control because of automation, frees some of the managers' time for truly management activities.

### **2.4.1 Distinction between Task Control and Management Control**

1. Many task control systems are scientific, whereas, management control can never be reduced to science.
2. In task control, either human beings are not involved at all or the interaction is between a manager and a non-manager. Whereas, in management control, managers interact with other managers.
3. Task control requires a different task control system for each type of task, whereas, the management control system is basically similar throughout the organization.
4. In task control, focus is on specific task performed e.g. manufacturing Job No. 59268 or ordering 100 nos. of part 3009. In management control, the focus is on organization units.
5. Management control relates to the broad type of activities and managers decide what is to be done within the general constraints of the strategies. Task control relates to specified tasks and for most of these tasks, little or no judgment is required as to what is to be done.

### **Self Assessment**

Fill in the blanks:

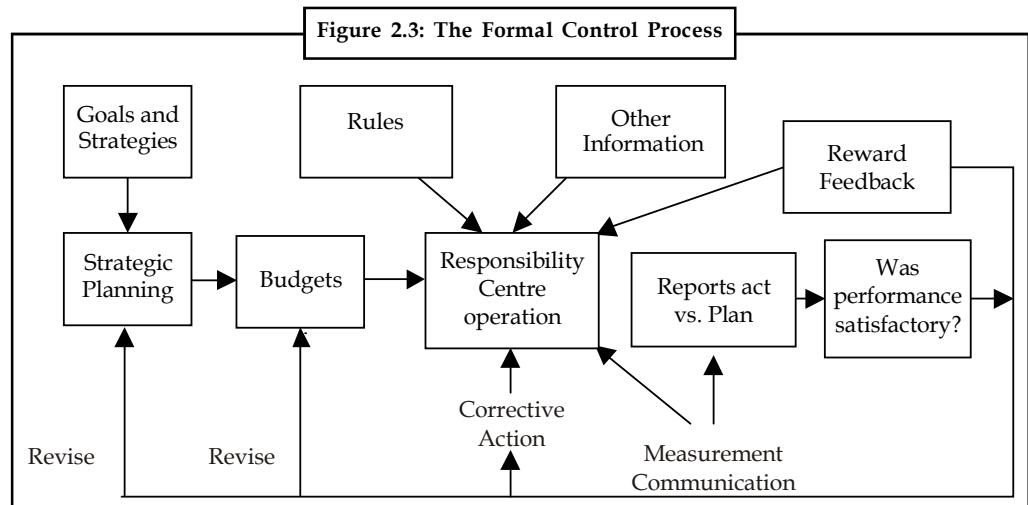
7. ....is transaction oriented i.e., it involves the control of individual tasks.
8. Human beings are used in these tasks only if they are .....than computers or other control devices.

## **2.5 Formal Control Process and Role Played by Accounting Systems and Information Handling System**

Figure 2.3 is a broad framework of the formal management control process. A strategic plan implements the organization's goals and strategies. All available information is used in making this plan. The strategic plan is converted to an annual budget that focuses on the planned revenues and expenses for individual responsibility centres. Responsibility centres are also guided by a large number of rules and formal information. They carry out the operations

**Notes**

assigned to them and their outcomes are measured and reported. Actual results are compared with those in the budget. In case of satisfactory performance, there is feedback to the responsibility centre in the form of praise or other reward. If not, the feedback leads to corrective action in the responsibility and possible revision of the plan.



Process of management control, it is clear that there are five basic steps:

1. Determination of standards or norms to be used in measuring actual results.
2. Measurement of actual results vis-à-vis planned results in the same lines/same areas as per standards and norms set earlier.
3. Identification and analysis of the gap between the expected and actual results.
4. Initiating remedial action to correct the shortfall or to provide an acceptable basis for revising the norms.
5. Recycling the information relating to the actual performance for its use in developing future plans.

It should be noted that most of the information flowing is stated in monetary terms, therefore, collectively they are called "financial system". Other functional managers have primary responsibility for non-financial system that relates to a certain function such as: the personnel records of the human resources department or the materials control, production scheduling system in the factory.



*Did u know?* The controller's responsibility for such system is to ensure that system throughout the organization is efficient and compatible with one another; the one system provides information for another, that unnecessary duplication is eliminated and the common terminology is used in all systems.

Furthermore, there are fully important considerations in the installation of effective management control system:

1. Development of a number of small units, groups or sub-units, which may be called responsibility centres,
2. Identification of critical variables that constitutes critical success factors in the overall performance of the organization, to be able to bring these into sharper focus.

Hence, to run the management control system successfully, it is imperative that an effective information system should be in operation i.e., it should have the following essential requisites:

**Notes**

1. Designing of the system is to be carried out after considering the information requirements of the different levels of management.
2. Information system should maintain a database to store all types of information required for making a variety of decisions. It should be capable of meeting routine and special information requirements of the organization's executives.
3. The system should have enough flexibility to meet the changing information requirements of its executives.
4. Information system should be properly designed and managed by the professionally trained persons.
5. Information system should be supported by an effective reporting system, which should be timely, accurate, economical and in proper format. It should be periodically reviewed.



*Task* Management control begins with corporate planning. Do you agree? State your views.

### **Self Assessment**

Fill in the blanks:

9. A .....implements the organization's goals and strategies.
10. The .....responsibility for such system is to ensure that system throughout the organization is efficient and compatible with one another.



*Case Study*

### **Rockford Company**

The Rockford Company founded in 1942, is in the business of laying wall-to-wall carpeting. The company was the brainchild of three persons, who became partners in the company. The company's innovation lay in changing the method of laying carpets, it broke the traditional practice of tacking carpets down. This idea was a great success, and in no time Rockford became the world leader in producing the tools for laying and stretching carpeting.

Rockford developed and marketed a special adhesive for carpet laying. In course of time, the product line was expanded to the production of adhesive for plastic, materials to be fixed in kitchens, bathrooms, on furniture and elsewhere. The company also expanded its operations by introducing special products such as steel folding doors for closets and wardrobes, steel door frames, and other items. The company went global and penetrated several foreign markets.

All the products were developed in US and were marketed in other countries. At this point, Rockford decided to move to a strategy of designing new products and making corporate acquisitions. Before embarking on the strategy, the company took stock of its position:

*Contd...*

<b>Notes</b>	<ol style="list-style-type: none"><li>1. The company had very strong marketing abilities on a national and international basis in the field of carpet accessories.</li><li>2. Its overseas subsidiaries in Sweden, Australia, Japan, New Zealand, etc., were managed well.</li><li>3. Since the product was unique, Rockford faced little competition from other small companies. The company, therefore, felt that it could spend more than its small competitors in marketing and investing in specialized capital equipment.</li><li>4. The specialized capital equipment used by the company was designed and built by its own engineers.</li><li>5. While the company was leader in some of its products, like floor-covering accessories, it was subject to small and vigorous local competition in some areas.</li><li>6. While the adhesives in relation to floor covering accessories were extremely marketable and had a large presence in the market, the marketability of its adhesive applications was limited.</li></ol>
	<p>In order to pursue the new product strategy and acquisition program effectively, the board of directors asked the president to take a decision on the product strategy for the company at the next meeting.</p> <p><b>Questions</b></p> <ol style="list-style-type: none"><li>1. What steps should the President take to develop a suitable strategy for Rockford?</li><li>2. Suggest a strategy to the Rockford company in the lights of facts and circumstances given.</li></ol>

## **2.6 Summary**

- Strategic planning focus on long range planning is least systematic; uses the rough approximation of the future. Whereas, task control focus on short runs operating activities, is most systematic; uses accurate current data. Management control is in between.
- Strategic formulation is the process of deciding the goals of the organization and the strategies for attaining these goals.
- Goals describe the broad overall aims of the organization and the term objectives describe specific steps to accomplish the goals within a given timeframe.
- Management control is the process by which managers influence other members of the organization to implement the organization's strategies. Management control involves anticipating future conditions in order to ensure that the organization's objectives are attained.
- If the management discovers a better approach – one more likely than the predetermined plan to achieve the organization's goals – the management control system should not obstruct its implementation.
- Task control is transaction oriented i.e., it involves the control of individual tasks. Rules to be followed in carrying out these tasks are prescribed as part of the management control process.
- Numerically controlled machine tools, process control computers and robots are task control devices. Human beings are used in these tasks only if they are less expensive than computers or other control devices.

- Responsibility centres are also guided by a large number of rules and formal information. They carry out the operations assigned to them and their outcomes are measured and reported. Actual results are compared with those in the budget.

**Notes**

## **2.7 Keywords**

**Management Control:** Management control is the process by which managers influence other members of the organization to implement the organization's strategies.

**Strategic Formulation:** Strategic formulation is the process of deciding the goals of the organization and the strategies for attaining these goals.

**Strategic Planning:** Strategic planning occurs at top management levels; task control at the lowest levels in the organization and management control is in between.

**Task Control:** Task control is the process of assuring that specific tasks are carried out effectively and efficiently.

## **2.8 Review Questions**

1. How can you relate goals and strategies? Give examples from your routine life.
2. Is there any significant difference between strategic planning and management control?
3. What is the difference between task/operational control and management control?
4. "Strategies are developed by marketing its core competencies with industry opportunities". Discuss the statement.
5. Briefly explain the Formal Control Process and role played by Accounting Systems and Information Handling System.
6. What are the tools for implementing strategy?

## **Answers: Self Assessment**

- |                          |                       |
|--------------------------|-----------------------|
| 1. Strategic planning    | 2. Management Control |
| 3. Strategic formulation | 4. Behavioural        |
| 5. Strategies            | 6. Goal congruence    |
| 7. Task control          | 8. Less Expensive     |
| 9. Strategic plan        | 10. Controller's      |

## **2.9 Further Readings**



Books Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

**Notes**

Merchant, Kenneth A, "*Management Control System: Text and Cases*", Pearson Education Asia.

Saravanavel, P, "*Management Control System*", Himalaya Publishing House.



*Online links*

- [humanresources.about.com/cs/strategicplanning1/a/strategicplan.htm](http://humanresources.about.com/cs/strategicplanning1/a/strategicplan.htm)
- <ftp://co.missoula.mt.us/opgftp/Transportation/Misc/Phase2Summary.pdf>
- [www.pim.com.pk/faq.htm](http://www.pim.com.pk/faq.htm)

## **Unit 3: Behavioural Considerations**

Notes

### **CONTENTS**

- Objectives
- Introduction
- 3.1 Goal Congruence
- 3.2 Managerial Styles
- 3.3 Informal Organizations
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  - 3.5.1 Entrepreneurial Structure
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  - 3.5.4 Matrix Structure
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### **Objectives**

After studying this unit, you will be able to:

- Discuss the goal congruence
- Explain the informal organisation
- Explain the formal control systems and informal control systems
- Formulate the objectives of various functions

**Notes**

## **Introduction**

People are important assets for an organization. Without the cooperation of the employees, managers cannot implement their decisions. To manage people effectively, control systems are required for the following three reasons – lack of direction, motivational problems and personal limitations.

Poor performance in organizations can be attributed to lack of direction among employees. Giving employees the required support and direction to accomplish organizational goals is one of the important functions of management control systems. Management Control System influences human behaviour good management control systems influence behaviour in a goal congruent manner that is, they ensure that individual actions taken to achieve personal goals also help to achieve the organisation's goals.

Motivation is important to help employees perform to their full potential. Most of the organization's problems occur because individual goals and organizational goals do not match. This results in de-motivated performance by the employees. At the managerial level too, lack of motivation will result in employees taking decisions that are harmful to the organization. The decisions may be made in order to advance the personal interests of the employees involved. In extreme cases, this could lead to employee fraud and theft. In IT companies, computer-related crime can result in huge losses for the organization. Hence, there is a need to control such behavior in an organization.

Another behavioral problem that can have serious consequences for an organization is personal limitations. In spite of high motivation to perform, certain employees may be unable to perform because of their personal limitations. These limitations are specific to individuals, and could also be because of inadequate training, lack of knowledge or information, and inexperience. Job design also plays an important role in performance. Some jobs are designed in a manner that creates stress. This can lead to accidents and errors in decision-making. Training plays an important role in reducing the severity of limitations at the individual level. Finding effective tools for control of such limitations is an important part of control systems.

### **3.1 Goal Congruence**

Senior management wants the organization to attain the organisation's goals but the individual members of the organizations have their own personal goals and they may not necessarily be consistent with those of the organization. The central purpose of a management control system is to ensure in so far as is feasible a high level of goal congruence.



*Notes* Goal congruence means that as far as feasible, the goals of organization individual members should be consistent with the goals of the organization itself.

In evaluating any management control practice, the two most important questions to ask are:

1. What actions does it motivate people to take in their own self-interest?
2. Are these actions in the best interests of the organization?

#### ***Informal Factors that Influence Goal Congruence***

Both formal systems and informal processes influence human behaviour in organisation, consequently they affect the extent of achievement of goal congruence. Formal systems include strategic plans, budgets and reports. Informal process takes into account work ethic, management style and culture, which are again external and internal to the organisation.

### **External Factors**

### **Notes**

External factors are norms of desirable behaviour that exist in the society of which organization is a part. These norms include a set of attitudes, often collectively referred to as the work ethic, which is manifested in employees' loyalty to the organization, their diligence, their spirit, and their pride in doing a good job (rather than just putting in time). Some of these attitudes are local – that is, specific to the city or region in which the organisation is located. In encouraging entrepreneurs to locate in their city or state, chambers of commerce and other promotional organizations, often claim that their location has a loyal diligent work force. Other attitudes and norms are industry specific e.g. rail road industry has norms different from airlines industry.

### **Internal – Culture**

Culture is one of most important internal factor (internal to the organization) – the common belief, shared values, norms of behaviour and assumptions that are implicitly accepted and explicitly manifested throughout the organization. Cultural norms are extremely important since they explain why two organizations, with identical formal management control systems, may vary in terms of actual control.

## **3.2 Managerial Styles**

Managerial style is something that we associate with Individual Managers. It is related to corporate culture, which is pervasive and is an organizational concept. The style of top management has a slow but steady influence upon the style of other managers and upon the culture of the organisation. On the other hand, culture influences the prevailing styles of management.



*Notes* Managers differ in their styles; some of the differences are listed below:

Rely heavily on reports and other formal documents	Rely heavily on informal contacts
Think in concrete terms	Abstract thinkers
Analytical	Heuristic
Risk taker	Risk – averse
Process oriented	Result oriented
People oriented	Task oriented
Friendly	Aloof
Long term oriented	Short term oriented
Theory X (They dominate decision making)	Theory Y (They encourage organisation participation in decision making)
Emphasis on monetary rewards	Emphasis on a broader act of rewards

### **Managerial Style is Influenced by the Managers**

1. Background
2. Personality characteristics

Background includes things like Manager's Age, Manager's formal education and Manager's experience in a given function such as Manufacturing, Technology, Marketing or Finance.

Personality characteristics include such variables as Manager's willingness to take risk and tolerance for ambiguity.

- Notes** Managerial style is important to the design of Control System because:
1. Control Systems influence the behaviour of those controlled in that the controllee focuses his energies centralized on the matters “that count”, because this is the manner in which his performance is evaluated.
  2. The precise manner in which Control System influences behaviour depends on how the systems are used by the managers.
  3. Managers differ in the use of Control Systems i.e., they have different styles of control.
- Though there is infinite number of Managerial Control Styles, it is possible in principle to describe three pure types of Managerial Styles in terms of their influence on the design of Control Systems. These are:
1. **External Control Style:** Under the External Control Style, the decision-making mechanism is managed by top executives after data are gathered at lower levels in the organisation. The external style uses a rather mechanical, authoritative, control system whereby goals are set at a demanding level, comprehensive formal measures are developed so as to cover all the areas of performance, the measurement system is designed to prevent manipulation on the part of controllees and rewards are tied closely to performance measures. This style is likely to produce considerable tension and will limit the flow of negative information from subordinates to the superiors.
- Design a control system in the external control style, the following characteristics has been identified.
- (a) **Infrastructure:** Powerful Central Management Group, semi autonomous divisions and highly refined formal systems of goals and controls. Product managers are used to do worldwide product planning and marketing. Normally such situation develops a strong controller organisation. Controllers directly report to the divisional controllers and the corporate controller checks the movement of inventories, payables, receivables and detects the first sign of incipient loss, excessive stocks or unprofitable products.
  - (b) **Rewards:** Positive incentives and big bonuses are used effectively to motivate superior performance. Sometimes the bonuses are 30% or more of their salary. This results in intensive competition among executives and always there is a tendency to show higher performance than what is actually achieved.
  - (c) **Communication and integration:** Here subordinates are scrutinized through the use of staff and through the use of frequent meetings. Parallel channels of information are used from the line and staff to monitor operations.
  - (d) **Control Process:** A highly detailed formal planning and control process is used to provide the facts in a variety of ways. Managers submit 5 year and 1 year plans. Weekly, monthly and quarterly reports measure progress against plans. Internal controls, monthly management reviews, constant pressures and samplings, are used to measure progress. Comprehensive analysis are done on policies and plans as to sales, returns and capital requirements.
2. **Internal Control Style:** The internal style is more participative and attempts to capitalize upon the internal needs and motivation of the subordinates, such as the need to accomplishment mastery, socialization, power and self-esteem in an attempt to build internal commitment for organizational goals. The formal and informal controls then emphasize self-control and steering control.

The internal control style reduces dysfunctional “game playing” and encourages quick reporting of problems, since a more open atmosphere is created. On the other hand, this style may lead to establishment of goals that can easily be met and therefore there is no outward pressure for above average performance.

**Notes**

The internal control style leads to the following control system characteristics:

- (a) *Infrastructure*: Responsibilities are pushed down the organisation to those closest to problems and cuts “red tape” out of organisation. In this style there is no necessary of centralized control but confidence is placed in the trustworthiness and motives of the managers. This style also leads to development of profit center concept.
- (b) *Rewards*: Bonuses are paid in relation to performance against plan and competition is encouraged among executives.
- (c) *Communication and Integration*: This style leads to extensive performance communications and consultative approach to knit the organisation together. Emphasised teamwork in problem solving and harmony in conflict resolution. Top managers are rotated to eliminate boredom and provincial vision.

3. **Mixed Control Style**: Mixed Control Style includes a wide spectrum of styles consisting of combination of the two extreme styles. It seeks participation without abandoning central direction. The rewards are based on performance both objective and subjective measures. The atmosphere is open but there is also insistence that performance attain certain levels. This style has the following characteristics:

- (a) *Infrastructure*: Normally analytical approach to decision-making and management is used. In such a situation, this is considerable latitude given to the operating divisions. But the top management possesses strong analytical power and chooses subordinates with similar analytical and strategic skills. Normally, in such a situation, there is relatively small staff at headquarters and therefore they don't seek multiple sources of inputs on operations.
- (b) *Rewards*: In this case the best people are hired and promoted.
- (c) *Communication and integration*: Numerous small meetings are used to obtain all the information required by the top management and to solve problems.
- (d) *Control Process*: Normally, financial plans are made yearly and updated monthly and quarterly. Weekly performance reports against plan and cash flow statements are also prepared. Some top management makes extensive use of return on investment, as performance criteria but number of reports sought is less.
- (e) *Comments and conclusions*: From the above, it can be seen each control style has a set of mutually supportive systems that are consistent with it. Management must ensure that it attains a certain level of internal consistency between its control styles and the remainder of the control system.



*Example*: An external control style would be inconsistent with the use of loose or unreliable performance measures.

Finally, managerial style should be adapted to the type of people who are being controlled. If the employees show a high level of commitment, or if the task is very complex and difficult to measure appropriately, it would probably be dysfunctional to use external style exclusively.

## Notes

## Self Assessment

### Multiple Choice Questions:



### 3.3 Informal Organizations

The lines/boxes on an organisation chart depict the formal relationships i.e. the official authority and responsibility of each manager. The chart may show that production manager of Division X reports to the General Manager of that division. But while fulfilling his responsibilities the production manager of Division X has to communicate with other people in the organisation as well as with other managers, support units, the corporate office staff and people who are friends and acquaintances. In extreme situation, the production manager may not give adequate attention to messages received from the General Manager if he is evaluated in production efficiency rather than on an overall performance. The realities of the management control process cannot be understood without recognizing the importance of relationships that constitute the informal organisation.

**Perception and communication:** In working towards the goals of the organisation, operating managers must know in clear terms what these goals are and what actions are needed to achieve them. Managers receive the information through various channels both formal (e.g. budgets and other official documents) and informal (e.g. conversation). Despite these channels, the managers are not very clear "what the senior management wants. In reality sometimes, messages received from different sources may conflict with each other. For example, the budget document may aim that managers are supposed to aim for the highest profits possible in a given year whereas the senior management does not want them to skip on maintenance or employee training since such actions may increase current profits but will have adverse long term effect.

### 3.4 Formal Control System

The Formal Control Systems have a major influence on the effectiveness of an organisation's management control. These systems can be classified as (1) The management control system itself and (2) rules.

**Rules:** The word rules denote all type of formal instructions and controls including standing instructions, job descriptions, standard operating procedures, manuals and ethical guidelines. Rules range from most trivial like requisitions to the most important (e.g. capital expenditure over ₹5 crores must be approved by the Board of Directors).

Unlike the directives implicit in budget numbers, which may change from month to month, most rules once laid down, are in force indefinitely unless they are changed/modified.

Some rules act as guides, which allow the organisation members to depart from either under specific circumstances or as per their own judgment that a departure would be in the best interests of the organisation. Such departure may require the approval of higher authority.

## Notes



 Example: Increase the credit limit of a customer whose performance in the past was satisfactory and under specific circumstances.

Some rules are positive requirements that certain actions should be taken (e.g. fire drills at prescribed intervals). Others are prohibited against unethical, illegal or other undesirable actions. Finally there are rules that never be broken under any circumstances.



 Example: Rule, prohibiting payment of bribes or a rule that airlines pilots must never take off without permission of air traffic controller.

Some specific types of rules are given below:

1. **Physical control:** Security guards, locked storerooms, vaults, computer passwords, television surveillance and other physical controls may be part of the control process.
  2. **Manuals:** Manuals in bureaucratic organizations are more detailed than are those in other organizations. Large organizations have more manuals than small organizations; centralized organizations have more than decentralized ones and organisation with geographically dispersed units performing similar function (such as fast food restaurant chains) have more than do single-site organizations.

With passage of time, some rules become outdated hence manuals and other sets of rules should be re-examined periodically to see that are still consistent with the senior managements wishes.

3. ***System safeguards:*** Various safeguards are built into the information processing system to ensure that information flowing through the system is accurate and to prevent fraud of any sort. These include cross checking totals with details, requiring signature and other evidence that the transaction has been authorized, separating duties, counting cash and other movable assets at frequent intervals and other procedures mentioned in auditing. This also includes checks of the system performed by the external and internal auditors.
  4. ***Task Control System:*** Many of the tasks are covered by rules. In case of automation, the system itself provides the control.

## **Self Assessment**

### Multiple Choice Questions:

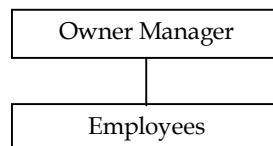
Notes

### **3.5 Structure in an Organization**

A firm's strategy has a major influence on its structure. The type of structure in turn influences the design of the organization's management control system. Although organizations come in all shapes and sizes their structures can be grouped into following:

#### **3.5.1 Entrepreneurial Structure**

The entrepreneurial structure is the most elementary form of structure and is appropriate for an organization that is owned and managed by one person. A small-scale industrial unit, a small proprietary concern, or a mini service outlet may exhibit the characteristics of organizations which are based on an entrepreneurial structure. The owner manager looks after all decisions, whether they are day-to-day operational matters or strategic in nature.



The advantages of this type of structure are:

1. Quick decision making as power is centralized
2. Timely response to environmental changes
3. Informal and simple organization systems.

The disadvantages are:

1. Excessive reliance on the owner-manager and so proves to be demanding for the owner manager
2. May be fully busy with day-to-day matters and ignore strategic decision
3. Increasingly inadequate for future requirements if volume of business expands.

#### **3.5.2 Functional Structure**

As the volume of business expands, the entrepreneurial structure outlines its usefulness. The need arises for specialized skills and delegation of authority to managers who can look after different functional areas.

The rationale for the functional form of organization involves the notion of a manager who brings specialized knowledge to bear on decisions related to a specific function as contrast to general purpose manager who lacks that specialized knowledge. A skilled marketing manager should make better marketing decisions and a skilled production manager should make better production decisions than that made by a generalist who is responsible for both marketing and production. Further in terms of need satisfaction a functional organization tends to bring together people with similar skills and interests and these groups are more congenial and more likely to recognize individual's skills. Thus, an important advantage of functional organization is its efficiency.

There are several disadvantages to a functional structure:

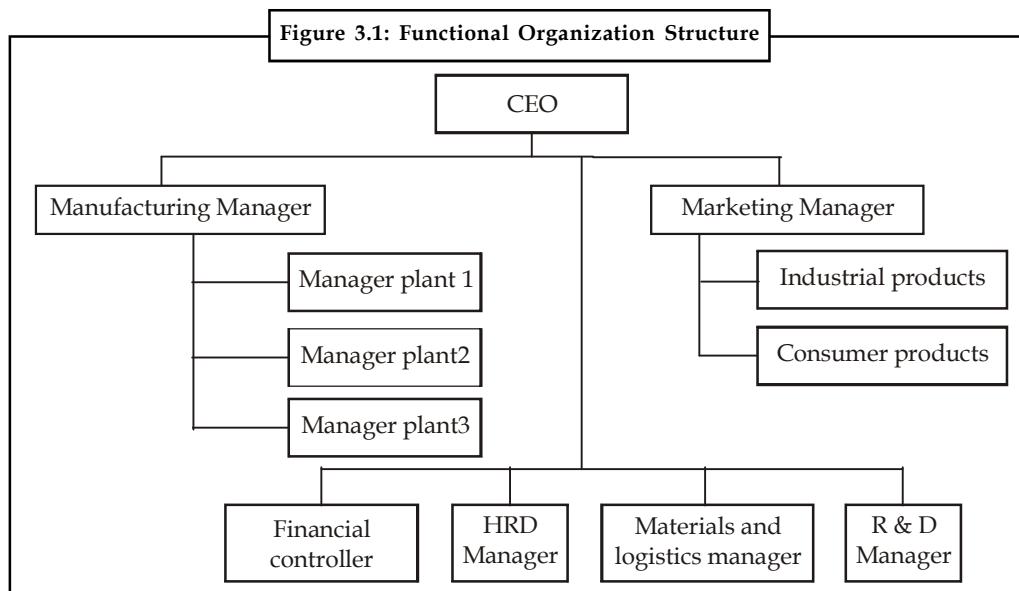
1. There is no unambiguous way of determining the effectiveness of the separate functional managers e.g. the managers of marketing and of production contributes to the final output. There is no precise way of determining how much of the profit is earned by each function.

2. Co-ordination becomes difficult between different functions for example: the marketing department may want to satisfy a customer's need for a certain quantity of product even if it involves over time work by the production which the latter is not willing to bear.
3. Functional structures are inadequate for a firm which has diversified products and markets. Since the emphasis has to be different.
4. Functional organizations are inadequate for a firm which has diversified products and markets since the emphasis has to be different
5. Functional organization tends to create 'silos' for each function thereby preventing cross-functional organisation in areas such as new product development.

Notes

The management control process in a functional organisation works as follows:

1. The senior managers are responsible for developing the company's overall strategy to compete, in its chosen industry as well as its functional strategies in such areas as research and development, manufacturing and marketing.
2. The plans for the organisation as a whole must be made at the very top (CEO's level) because these plans necessarily involve co-ordination of all the functions that contribute to the final output. For example, plans for marketing dept, must take into account the ability of the production departments to produce goods as per specification.
3. The strategic plan/long term planning involves only senior executives and a planning staff. In a very small organisation the process may involve only CEO assisted by the controller.
4. The operating budget shows the details of revenues and expenses for the budget year for each responsibility area and for the organisation as a whole. The diagram of functional organisation is given below:



### 3.5.3 Business Unit Organization Structure

The business unit form of organisation is designed to solve problem inherent in its functional organization. A business unit also called a division is responsible for all its functions involved in producing and marketing a specified product line or group of product lines. Business unit

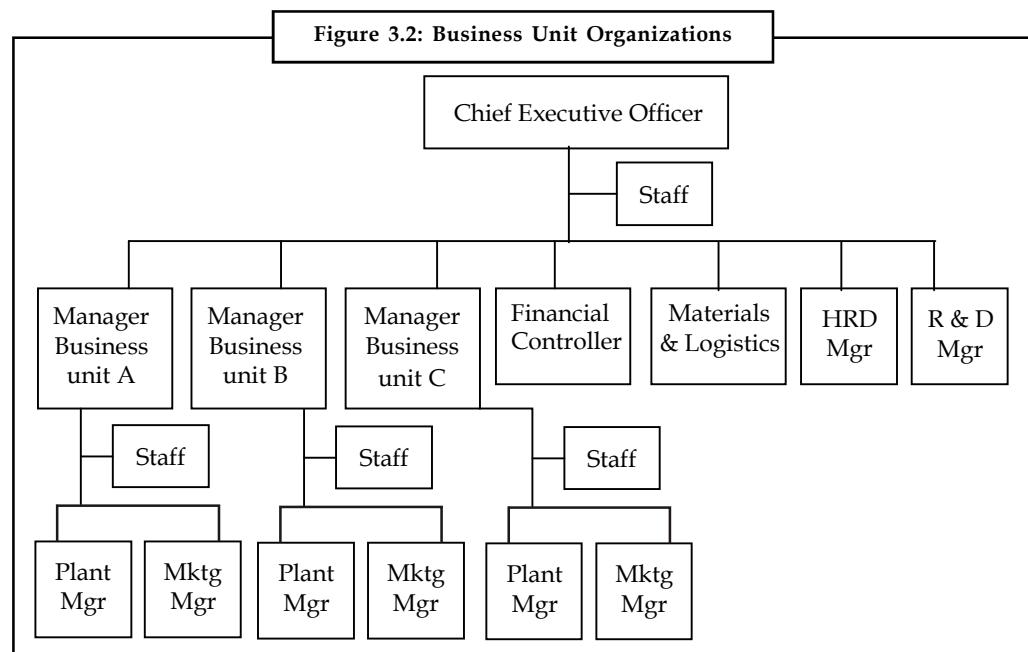
**Notes**

managers act as if their units are separate companies. Figure 3.2 shows a summary form of divisional organization. They are responsible for planning and co-coordinating the work of the separate functions – ensuring that the plans of the marketing department are consistent with production capabilities – and for resolving the disputes that arise between these functions. The divisional manager's performance is measured by the profitability of the business unit and this is satisfactory because profit incorporates the activities of both marketing and production.

Although business unit managers exercise broad authority over their units, head office reserves certain key factors–

1. Head office is responsible for obtaining funds for the company and for allocating these funds to the various business units in accordance with its policy of best use.
2. Headquarters also approves budgets and appraise the performance of business unit managers, sets their compensation packing and if situation demands remove them.
3. Head office establishes the charger of each business unit – i.e. the produce lines it is permitted to make and sell and/or the geographical territory it can operate and sometimes the customers to which it may sell.

Headquarters also establishes company-wide policies. It may assist the business units in production and marketing activities and in specialized areas such as human resources, legal affairs, public relations and controller and treasury matters. In case of unrelated diversified company, the autonomy of the business unit managers tend to increase, since Head Office senior managers lack the knowledge and expertise to make strategic and operating decisions and there is very little interdependence across business units in a conglomerate. In a single business or a related diversified firm synergies may be important and business units may be given the freedom to make sourcing decisions. In a conglomerate the usual transfer pricing policy is to give sourcing flexibility to business units and to use arm's length market prices.



The following are the advantages of business unit form of organization:

1. It provides a training ground in general management.

2. Since business unit is closer to the market for its products its manager may make sounder production and marketing than HO might and the unit as a whole can react to new threats or opportunities more quickly.

Notes

Disadvantages are:

1. Business unit staff may duplicate some work that is done at the head quarters.
2. In some cases, the layers of business unit staff may cost more than the value gained by divisionalisation.
3. Disputes may be there between business unit staffs and headquarters, one business unit infringing the charter of another unit. There may also be disputes between business unit personnel and headquarters staff.

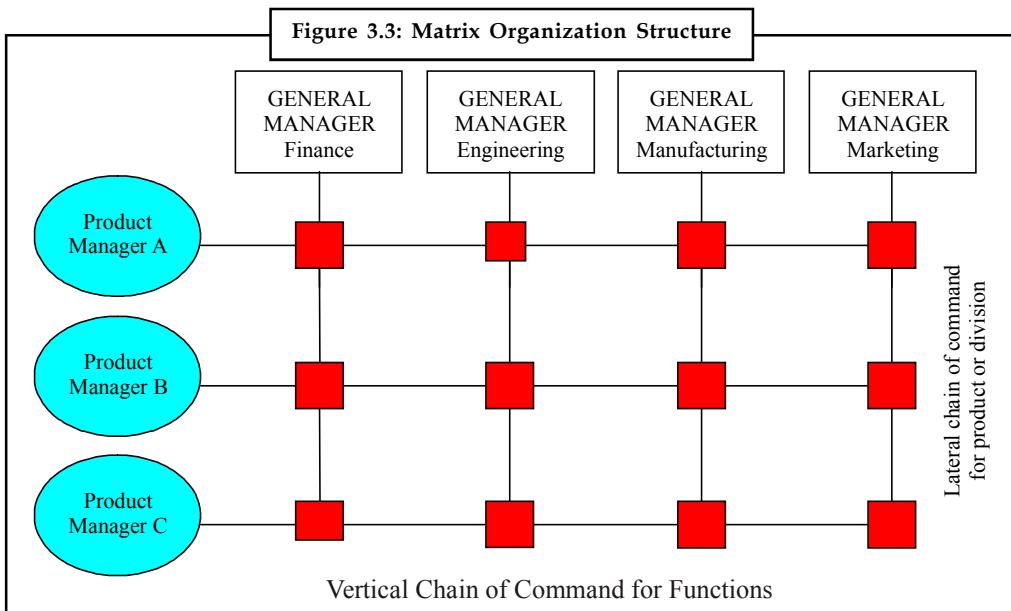
Because of the apparently clear cut nature of profit responsibility in a business unit organization, divisional organization structure is preferred since they can be viewed as profit centre or investment centre.



*Task* Interview a few businessmen whom you know and ask them about the kind of structure they follow.

### 3.5.4 Matrix Structure

In large organization, there is often a need to work on major products or projects, each of which is strategically significant, hence the requirement of a matrix type of organization structure. Figure 3.3 illustrates a matrix structure. Essentially such a type of structure is created by assigning functional specialists to work on a special project or a new product or service. For the duration of the project, the specialist from different areas forms a group or team and report to the team leader. Once the project is completed the team members revert to their parent departments.



The matrix structure is a combination of the product and functional organisation and is usually created for executing a project which requires the skilled services of a functional man as well as the specialised knowledge of a product man. Large turnkey projects in specialised fields require

**Notes** a matrix structure. The distinguishing characteristic of a matrix structure is that it operates under a dual authority. A person is accountable to two bosses at the same time, one his usual boss and the other his boss for the duration of the project. Obviously the problems emanating from this type of structure relate to conflicting roles and authority arising out of an ambiguous demarcation of authority and responsibility. Matrix structures are increasingly used in organisations as they become more complex and as the pace of change increases. They are similar to project management arrangements, although matrix structures may be a permanent feature. Matrix structures, like project management, involve the creation and management of multi-disciplinary teams. The team leaders have a dual reporting relationship. For the structures to work effectively they should only be introduced when appropriate and even then after careful planning. An important aspect is the training of multi-disciplinary team leaders. However, it can also be crucial to ensure that those other key members of management who need to monitor and support matrix structures are properly selected and have received appropriate management training.

Since each project is a potential profit centre, the power and authority of project managers come directly from the general manager. He is totally responsible and accountable for the project success. Functional departments are responsible to maintain technical excellence. A unified technical information base is maintained and made available and exchanged for each project. Functional departments are expected to keep track of latest technical advances in the industry. Thus, while a project management is a "coordinative" function, a matrix management is a "cooperative" function. In matrix organisation, both vertical as well as horizontal communication and information channels must exist for decision making. The horizontal line must be permitted to operate as a separate entity except for administrative purpose. All managers, functional and project, must have an input in the planning process. And a quick and efficient conflict resolution mechanics must be constituted.

The basis for matrix concept is an attempt to create synergism through shared responsibility between project and functional management, there shall be a base of mutual understanding between the two. Since both maintain some authority, responsibility and accountability on a project, they must continuously negotiate. The process is more behavioral than quantitative; the inter-personnel and communicative skills are of paramount importance. Problem solving will be a fragmented and diffused process. There exists a tendency to seek solutions and to identify the problems in terms of duties of the particular unit rather than looking beyond it in the context of entire organisation. Such "tunnel vision" can exist at all levels of management. It is, therefore, inevitable that conflicts occur between functional and project managers. The individuals placed at the interface positions, thus become critically important. They have to convince both the functional and project managers to communicate with each other to resolve the problem.

The advantages of matrix structure are:

1. Allows individual specialists to be assigned where their talent is the most needed.
2. Foster creativity because of pooling of diverse talents.
3. Provides good exposure to specialists in general management.

The disadvantages of matrix structure are:

1. Dual accountability creates confusion and difficulty for individual team members.
2. Requires a high level of vertical and horizontal combination.
3. Shared authority may create communication problems.

## Self Assessment

## Notes

### Multiple Choice Questions:



### **3.6 Functions of the Controller**

The term controller refers to the person who is responsible for designing and operating the management control system. In many organizations, the title of the person is chief financial officer. The controller performs the following functions:

1. Designing and operating information and control systems.
  2. Preparing financial statements and financial reports (including tax returns) for shareholders and other external parties.
  3. Preparing and analyzing performing reports, interpreting these reports for managers and analyzing program and budget proposals from various segments of the company and consolidating them into an overall annual budget.
  4. Supervising internal audit and accounting control procedures to ensure the validity of information, establishing adequate safe guards against theft and fraud and performing operational audits.
  5. Development of personnel in his function and participating in the education of management personnel in matters relating to controller function.

It may be noted that Chief Financial Officer (CFO) is responsible for both the controller functions (as discussed above) and also the treasury function. The controller and the treasurer report to CFO. Since we have not discussed the treasurer's function, we use the narrower term controller.

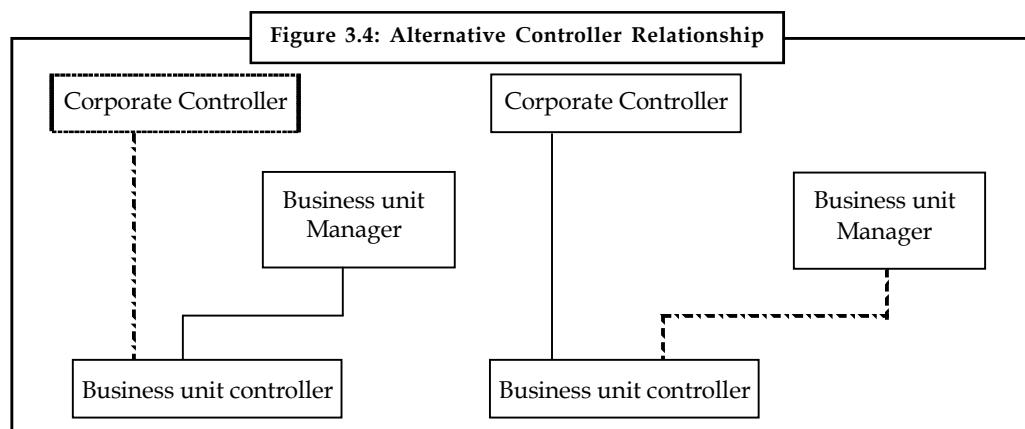


*Caution* Earlier, the controller (or CFO) was responsible for processing the information required by the management control system. Currently, companies typically have a Chief Information Officer (CIO) who carries on that function. In some companies, CIO reports to the CFO whereas in others CIO reports to the senior management.

**Relation to Staff Function:** The controller's function is a staff function. Though the controller is usually responsible for the design and operation of the management control system which collects and report information the use of this information to the responsibility of line management CEO or business unit managers. The controller may be responsible for developing and analyzing control measurements and for recommending actions to management. Other possible work may include monitoring adherence to spending limits as laid down by Chief executive, controlling the integrity of the accounting system and safe guarding company assets from theft and broad (which is also known as Risk Management).

**Notes**

The controller does make some decisions – primarily those with implementation of policies decided by the line management. For example, a member of the controller organization decides on the propriety of expenses incurred by the salesman either on the cost of meals or why it was necessary to fly first class rather than economy class.



Controllers play an important role in the preparation of strategic plan and budgets. They are also called to scrutinize performance reports to ensure accuracy and to call line managers attention to items requiring further inquiry. The difference is that their divisions can be overruled by the line managers to whom the subordinate manager is responsible.

**Reporting relationship of the business unit controller:** Business unit controllers have divided loyalty. On one hand they are responsible to the corporate controller for the overall operation of the control system. On the other hand, they also owe allegiance to the managers of their respective business units for whom they provide staff assistance. Two possible types of relationships are shown in Figure 3.4.

In some companies, the business unit controller reports to the business unit manager and has “a dotted line” relationship with the corporate controller. Here the business unit general manager is the controller’s immediate boss and he has ultimate authority in hiring, training, compensation, promotion and even termination within that business unit. These decisions are rarely made, without input from the corporate controller.

In other companies, business unit controller report directly to the corporate controller – as indicated by a solid line on the organization chart.

There are problems with each of these reporting relationships. If the business unit controller works primarily for the business unit manager, there is a possibility that he may not provide completely objective reports on business unit budget and business unit performances to senior management. On the other hand, if the business unit controller works primarily for the corporate controller the business unit manager may treat him as “a spy from the front office” rather than as a trusted aide.

Regardless of the reporting relationship it is expected that the controller will give objective reports and should not participate in sending misleading information or in the concealment of unfavourable information. The overall ethical responsibility inherent in the position does not support such unethical practices.

### **3.7 Decentralization as a Management Philosophy**

Notes

Decentralisation is best held to mean a state or pattern of organisation in which specific responsibilities have been “delegated”, the implication of this is that ‘delegation’ is the process and ‘decentralisation’ is the resultant embodiment of it.

Centralisation can only mean reserving responsibilities to given units or sections of central head quarters, but such units not necessarily of themselves carrying top management authority.



*Caution* The delegation or subdivision of management responsibility can be made on either of two bases: (i) the whole of the process of command can be subdivided into smaller, self-contained units or (ii) the process of command can be subdivided in such a way that there is concentration of specialist responsibilities established to serve the units of direct command.

The decentralized pattern reflects whichever pattern has been used, the second one gives rise to the combined pattern of ‘operational’ and ‘functional’ responsibilities. Delegation of the ‘operational’ responsibilities involves the decentralisation of the process of command itself; the managers of the decentralized sections are thus the users of the services provided by the specialist or functional sections.



*Task* Take an example of a company from the service sector and find out all its objectives if possible.

#### **3.7.1 Decentralised Units – Advantages and Potential**

1. The speed of operating divisions may be increased because many decisions do not have to be referred to corporate head quarters.
2. The quality of many decisions may be improved because they can be made by the business units closest to the point of decision.
3. Corporate management may be relieved of day-to-day decisions and can concentrate on broader issues.
4. Profit consciousness may be enhanced. Business unit manager, who is responsible for profits, will find its ways and means to improve them.
5. Measurement of performance is broadened since profitability is a more comprehensive measure of performance than either revenue or expenses separately.
6. A business unit provides an excellent training ground for general management.
7. Business unit managers, with fewer corporate restraints, should be freer to use their imagination and initiative. If a company has a strategy of diversification, business unit structure facilitates use of different talents and expertise in different types of business.
8. Divisionalization provides top management with information on the profitability of components of the company.
9. Business units are subject to pressures to improve their competitive performance.

## Notes

### 3.7.2 Decentralised Units - Difficulties and Problems

1. To the extent that decisions are decentralized, top management may lose some control. Control has to be exercised instead of personal direction through management control reports.
  2. Competent business unit managers may not be available in a functional organisation because there may not have been sufficient opportunities for them to develop general management competence.
  3. Organisation units that were once co-operating as functional units may now compete with one another. An increase in one business unit manager's profits may decrease that of another's.
  4. Frictions can increase. There may be arguments over the appropriate transfer price, the assignment of common costs, and the credit for revenues that were generated jointly by the efforts of two or more business units.
  5. There may be too much emphasis or short-run profitability at the expenses of long-run profitability e.g. business unit manager will postpone R&D, training programme or maintenance in order to report high current profits.
  6. There is no completely satisfactory system of ensuring that each business unit by optimizing its own profits will optimize company profits.
  7. If the head quarters management is more capable or has better information than the average business unit manager, the quality of some of the decisions may be reduced.
  8. Divisionalisation may cause additional costs because it may require additional management, staff personnel and record keeping.

## **Self Assessment**

## Multiple Choice Questions:



### **3.8 Management Control Process**

The management control process involves three interrelated activities – communication, motivation and evaluation. First, it involves communication between the superior and the subordinates. Communication helps the subordinates understand the goals of the organization. The superior should make sure that the subordinates understand what the organization expects of them. Second, for the subordinates to put in their best efforts to achieve organizational goals, they have to be motivated. It is the responsibility of the superior to motivate the subordinates. Finally, for effective performance, superiors should evaluate the work of the subordinates and give them feedback periodically. It is essential for the superior to evaluate the performance of subordinates without any bias.

### **3.8.1 Characteristics of a Good Management Control System**

Notes

A good management control system ensures success for an organization. Good management control here implies that the goals of the organization are clearly communicated to the employees, and that the employee is confident about performing his tasks well.



*Example:* Good inventory control means that employees have information about the quantity of inventory present and its availability at different locations.

An organization does not usually have perfect control. For perfect control all the employees should be working in the best possible way. But this is not always possible as employee behavior is not stable. Good control can be achieved in the following ways:

1. **Future-oriented:** Planning is always oriented to the future. The organization should be focused on the future. Employees should be encouraged to be flexible so as to respond effectively to change.
2. **Clear objective:** Good control cannot be established unless the multiple objectives of a particular task are considered separately.



*Example:* To assess the control systems relating to production, all major performance parameters like efficiency, quality and asset management, have to be measured.

3. **Minimum control losses:** Control devices are costly and not always economically feasible. So, control devices should be put in place only when the economic benefits exceed the costs.



**Notes** The difference between the performance that is theoretically possible and one that can be reasonably expected is called "control loss." An organization achieves optimal performance when control losses are minimized.

### **Self Assessment**

Multiple Choice Questions:

9. Which of the following does not apply to goals?
  - (a) They are broad statements that define what an organization wants to achieve in the long run,
  - (b) They are time specific,
  - (c) External pressure may force an enterprise to alter its goals,
  - (d) They assist in measuring the performance of an organization.
10. In which of the following control styles is rewards strongly linked to formal measurement systems?

(a) Mixed control style	(b) External control style
(c) Internal control style	(d) None of these

Notes

### 3.9 Types of Management Control Systems

Control systems in an organization fall under two broad areas: formal and informal. Formal controls are laid out in writing by the management, whereas informal controls arise as a result of employees' behavior.



*Example:* Formal controls are plans, budgets, regulations and quotas. Informal controls include group norms and organizational culture.

Formal controls are framed by the managers, whereas informal controls often originate with employees and are affected by general socio-cultural factors.

**Formal Control System:** Formal control systems are written, management-initiated mechanisms that influence the behavior of employees in achieving the organization's goals.

Formal controls can be classified into three types, based on the nature of management intervention. They are:

1. **Input controls:** These are the actions taken by the company before a planned activity is implemented. These measures help the company to select the right way to undertake the activity. Input controls include selection criteria, recruitment and training programs, manpower allotments, strategic plans and resource allocations.
2. **Process controls:** Process controls involve tracking certain variables and taking corrective action whenever there is any deviation from specified parameters in the variables.

The control action takes place before the process of transformation is completed and the output is produced. Process control is exercised when the firm attempts to influence the ongoing activity to achieve the desired ends.

The control is applied to the behavior or activities rather than the end results.



*Example:* Under a feed-forward system of inventory control, the factors that affect inventory levels of finished goods, such as the rate of sales or dispatch delays, are tracked.

When the sales begin to decline or there is a dispatch bottleneck, this information is fed forward, and the level of the finished goods inventory is controlled by reducing production. Thus, the inventory levels are prevented from exceeding required levels. Alternatively, the managers may realize that the original standards for sales or dispatch delays are no longer appropriate and must be revised. This again feeds into a loop, which leads to the inventory objectives or plans being updated. Process control can also be illustrated using the example of a salesperson's job. The management may direct the salesperson to follow certain procedures for new market development, but may not hold the salesperson responsible for the extent of new business generated i.e. the end result. In such a case, process control has been exercised.

3. **Output controls:** Output control is exercised when performance standards are set and monitored, and the results are evaluated. Output control takes place when the control activity is based on the comparison of actual and planned outcomes.

Such controls are applicable when it is easy and inexpensive to measure the output and when there are few elements of uncertainty.



**Notes**

*Notes* In this type of control, the management expects the employee to perform in a result-oriented way, as it believes that the employee has the requisite knowledge to undertake the activities required, in a suitable manner, and to complete the assigned task without management intervention.

**Informal Control System:** These are unwritten, typically worker-initiated mechanisms that influence the behavior of individuals or groups in business units. There are three types of informal controls. They are:

1. **Self-control:** It deals with the establishment of the personal objectives by the individual, monitoring their attainment and adjusting the behavior in the organization to attain the goals. Self-control can be beneficial to an organization if the organization's goals are in congruence with the individual's goals. But if the goals do not match then the performance of the employee can suffer.
2. **Social controls:** Social control refers to the prevailing social perspectives and patterns of interpersonal interactions within subgroups in the firm. In this type of control, an organization establishes certain standards, monitors conformity with the standard and takes action when deviations occur. Social control arises out of the internalization of values and mutual commitment towards some common goals.
3. **Cultural controls:** According to William G Ouchi, culture is "the broader values and normative patterns that guide worker behavior within the entire organization." Cultural control can be realized by norms of social interaction, and stories, rituals and legends relating to the organization.

### **3.9.1 Subsystems and Components of Management Control Systems**

The subsystems and components of control systems can be discussed on the basis of formal and informal processes.

#### **Formal Control Process**

The formal control process has two dimensions – formal planning and formal reporting.

1. **Formal planning process:** The formal planning process has two dimensions: strategic planning and operations planning. In most organizations there are two budgets- one for operations and one for strategy; and, there are two sets of reports - one for strategic projects and one for operating activities. The formal planning and control process should support the style and culture of the organization, and should be supported by the infrastructure, the rewards, and the communication systems in the organization.

A strategic planning system is necessary to assist the organization in the planning and control of projects. It helps the organization to decide its goals and objectives, and key strategies. An operational planning system undertakes activities that are short term in nature.

2. **Formal reporting process:** Detailed reports help the organization to assess the progress of its strategic and operational planning. Monthly, quarterly or yearly reports help the organization to analyze its performance periodically, and to decide on the next set of programs to be undertaken.

**Notes** Although planning and reporting appear to be two distinct processes, there should be a certain degree of integration. Strategic programs are funded out of current operations and grow out of current activities. Further, strategic plans and programs have a great impact on current operations and so, these strategic plans should be adjusted from time to time in line with their effect on operations.

## Informal Control Process

Management decisions are based upon experience, intuition and feeling. Informal control processes are formed as a result of interaction between people. The informal control process helps in the development of new goals and objectives. There are a number of mechanisms for control through informal systems. One mechanism is the use of ad hoc teams to solve problems, improve productivity and achieve organizational change. Informal teams usually consist of cross-organizational groups which work in coordination to solve problems related to a particular client, product or market. Informal communication systems evolve as people develop work relationships. Informal communication is helpful in supporting the key values of the organization. Fostering informal communication is critical to the development and maintenance of effective informal controls.

Informal rewards and recognition are conferred upon the key team members within the informal system. The respect an individual is shown is an informal reward for performance. Communication systems are not highly guarded in informal systems.

## **Self Assessment**

### Multiple Choice Questions:

11. Identify the main functions of a controller?
    - (a) To design the control system
    - (b) To prepare financial reports and statements for the clear understanding of the shareholders and external parties
    - (c) To develop internal auditing systems for the control of the physical and monetary assets of the firm
    - (d) All of the above
  12. In which type of organization employees are permanently assigned to a functional organization unit, they work temporarily on a project and when that work is completed they are assigned to another project?
    - (a) Complex organization
    - (b) Matrix organization
    - (c) Control organization
    - (d) Line organization
  13. Most of the formal information flowing through an organization in its daily operations constitutes.
    - (a) Management control information
    - (b) Task control information
    - (c) Operational control information
    - (d) All of the above



Case Study

### Victor Automobiles

**V**ictor Automobiles was established in the year 1985 and employed more than 3,000 people in its production and operations plants. Its four plants were located at Chennai, Noida, Kolhapur and Bhubaneswar. The operations manager of the Kolhapur plant, Vikas Kapoor was considered to be one of the toughest bosses to work with. He gave the employees stringent deadlines and never bothered to find out if employees were having any difficulty in completing their work. The employees felt the environment was too tense and were unhappy that there was no career growth. There was a heavy turnover of employees at the Kolhapur plant.

Sensing that something was wrong, the top management transferred Kapoor to another branch, and appointed Jaychandran as the operations manager of the unit. Jaychandran had 20 years of experience as an operations manager. His style of control was different from that of Kapoor's. He set strategies in consultation with the workers and designed plans to solve problems jointly. He did not believe in blaming a particular individual for its occurrence. When he found that an employee's performance was moving in an undesirable direction, he met the employee personally and looked for the reasons for this. He then developed an appropriate solution to the problem. The reward system under Jaychandran was not based on one or two specific measures of performance, but on the employee's overall performance. His style was not to punish employees for past actions but to help them improve their performance in the future.

He believed in the philosophy of management by walking around, and made it a point to spend some time talking to employees and listening to their problems. He felt that such informal communication would help boost the confidence of the employees in their employers.

Jaychandran held the view that through MBWA, the values and culture of the organization could be instilled in the employees and the problems of the employees too could be sorted out.

#### Questions

1. The managerial styles used by Kapoor and Jaychandran were different. What effect do these managerial styles have on control systems?
2. The case discusses managerial styles and their impact on control systems. What are the various factors a manager has to consider before finalizing on a particular style?

Notes

## 3.10 Summary

- In this unit we have studied the concept of goal congruence and informal factors influencing it.
- In broad sense individual actions to achieve personal goals should also help to achieve the organization goal.
- This serves the purpose of Management in achievement of high level of goal congruence.
- Managerial style is an organizational concept which is related to corporate culture.
- The prime functions of a controller are the responsibility which involves completely designing and operating the management control system.

Notes

### **3.11 Keywords**

***Business Unit:*** Division is responsible for all its functions involved in producing and marketing a specified product line or group of product lines.

***Controller:*** A person responsible for designing and operating Management Control System.

***Corporate Culture:*** A cumulative term consisting of shared values, common perceptions and common premises that members of the organization apply to its activities and problems.

***Entrepreneurial Structure:*** It is appropriate for an organisation that is owned and managed by one person.

***External Control Style:*** The decision-making mechanism is managed by top executives after data are gathered at lower levels.

***Formal systems:*** Include strategic plans, budgets and reports

***Goal Congruence:*** Means that as far as feasible, the goals of organization individual members should be consistent with the goals of the organization itself.

***Informal Process:*** Takes into account work ethic, management style and culture

***Internal Style:*** More participative and attempts to capitalize upon the internal needs and motivation of the subordinates

***Matrix Structure:*** Created by assigning functional specialists to work on a special project or a new product or service

***Mixed Control Style:*** Includes a wide spectrum of styles consisting of combination of the two extreme styles

### **3.12 Review Questions**

1. Can you trace the evolution of control system in an organisation?
2. What is a business policy and what is its relationship to the business objective? How should a new policy be established or an existing policy altered?
3. What are the principles applicable to the formation and use of company objectives as an essential feature of the management control process?
4. "The essence of decentralisation is the freedom to make decisions". Do you agree?
5. Discuss the benefits of decentralisation.
6. What are the problems and pitfalls of decentralized organisation?
7. Profit centre is often viewed as a synonym for decentralized subunit. Do you agree? Give reasons.
8. Explain various Managerial Styles? How many styles can be identified? How managerial style is important to the design of Control System?
9. What do you mean by Corporate Culture? How many different types of corporate culture can be identified? How Corporate Culture affect the design of Control System?
10. What are the Control Systems in a Functional Organisation, Business Unit Organisation and Matrix organisation?

11. How external environment is important to the design of Control systems? In Indian situation internal environment plays a more dominant role as a determinant of the emergent structure, why?
12. What are corporate level strategies and business unit strategies? Who are involved in framing such strategies and what are the key strategic issues?

**Notes**

### **Answers: Self Assessment**

- |         |         |
|---------|---------|
| 1. (c)  | 2. (c)  |
| 3. (b)  | 4. (c)  |
| 5. (c)  | 6. (c)  |
| 7. (c)  | 8. (c)  |
| 9. (b)  | 10. (b) |
| 11. (d) | 12. (b) |
| 13. (b) |         |

### **3.13 Further Readings**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House.



*Online links*

[www.accel-team.com/techniques/goal\\_congruence](http://www.accel-team.com/techniques/goal_congruence).

[www.citehr.com/117670-managerial-styles.html](http://www.citehr.com/117670-managerial-styles.html)

[www.openlearningworld.com/.../Organizations/Formal%20and%20informal%20organisation](http://www.openlearningworld.com/.../Organizations/Formal%20and%20informal%20organisation)

Notes

## Unit 4: Responsibility Centers

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### **Objectives**

After studying this unit, you will be able to:

- Understand the concept of responsibility accounting and its structure
- Discuss the expense centres

- |  |              |
|--|--------------|
| <ul style="list-style-type: none"><li>• Explain the marketing centres</li><li>• Describe the research and development centres</li><li>• Identify the profit centres</li><li>• Explain the investment centres</li><li>• Explain the Economic Value Added (EVA) (Residual Income)</li><li>• Discuss the measuring and controlling of assets employed</li><li>• Explain the multiple performance measures</li></ul> | <b>Notes</b> |
|--|--------------|

## **Introduction**

A Management Control System is a set of interrelated communication structures that facilitates the processing of information for the purpose of assisting managers in coordinating the parts and attaining the purpose of an organization on a continuous basis.

It is necessary to design the elements of the control system infrastructure, that is, the organisation structure; responsibility centres performance measures and rewards, in a mutually supportive and adoptive way so as to effectively implement the goals of the overall organisation. A properly designed infrastructure is crucial to ensure that resources will be allocated effectively in decentralized decision-making in pursuit of organizational goals.

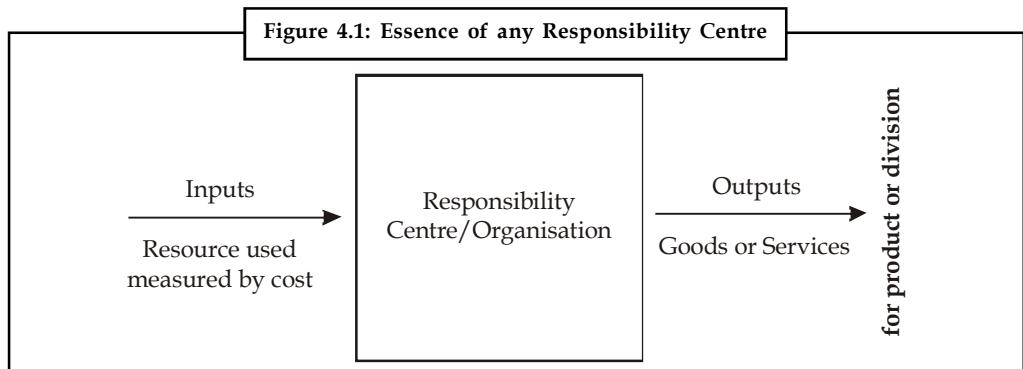
Organization structure can vary from Entrepreneurial structure, Functional Structure, Business Unit Organization Structure to Matrix Structure. In all the cases, the CEO is at the top, the managers of the business units, functional heads, departments, sections and all other sub-units below the CEO constitute the hierarchy of managers working together to achieve certain common goals for an organization. Each level of the managers or sub-unit constitutes responsibility centre.

### **4.1 A Responsibility Centre**

The term responsibility centre is used to denote any organization unit that is headed by a responsible manager. In fact, a company is a collection of responsibility centres, represented by a box in the organization chart. These responsibility centres form a hierarchy. At the lowest level in the organization are responsibility centres for sections, work shifts or other small organization units. At the highest level are departments or business units (divisions). And from the standpoint of senior management and the board of directors, the whole company is a responsibility center, although the term is usually used to refer to units within the company.

A responsibility centre exists to accomplish one or more purposes known as objectives, within the organization goals and set of strategies lay down to achieve these goals. The objectives of the responsibility centres are to do their part in implementing these strategies. A responsibility centre uses inputs, such as: physical quantities of material, hours of various types of labour and variety of services. It requires working capital, equipment and other assets to do this work. As a result of this work, the responsibility centre produces outputs such as goods or services (in case of staff units such as: human resources, engineering, accounting, administration). The goods and services produced by a responsibility centre may be given either to another responsibility center as inputs or to the outside world, in which case, they become outputs of the whole organization and revenues are earned by selling these outputs.

Notes



1. **Relationship between inputs and outputs:** Management is responsible for ensuring the optimum relationship between inputs and outputs. In some centers, the responsibility is causal and direct, as in the case of production department.



*Example:* Inputs of raw materials become part of the finished goods.

Hence, the control focus on using the minimum input necessary to produce the required output according to the correct specification and quality standards.

In many situations, inputs are not directly related to outputs e.g. advertising expenses through an input to increase sales revenue but there are so many factors other than advertising, the relationship between increased advertising and any subsequent increase in revenue is not always demonstrable and the management's decision to increase advertising expenditure is based on judgement rather than data. Similarly, the relationship between inputs and outputs is even more ambiguous in case of R&D since the money spent on today's R&D may not be known for several years and hence the optimum sum any organization should spent for R&D is undeterminable.

2. **Measuring inputs and outputs:** In some of the responsibility centers, much of the input can be stated in physical terms-hours of labour, quarts of oil, reams of paper and kilowatt hours of electricity. In MCS, these quantitative amounts are translated in monetary terms. The monetary value of a given input is ordinarily calculated by multiplying a physical quantity by a price per unit e.g. hours of labour times rate per hour, electricity cost by kilowatt hours × hourly rate) the resultant monetary sum is called cost, and this is the way a responsibility centre input is commonly expressed.

Inputs are resources used by the responsibility centre. Patients in a hospital or students in a school are not inputs. Rather inputs are the resources that the hospital or school uses to accomplish the objective of treating the patients or educating the students.

It is much easier to measure the cost of inputs than to calculate the value of outputs. Inputs such as: R&D, human resources training and advertising and sales promotion may not affect the output of the year in which expenditure is incurred. In such cases, outputs of such responsibility centres are not measured, the input cost is the measurement criteria.

3. **Efficiency:** Efficiency measure of performance relates to the establishment of standards with regard to the amount of inputs used over a specific period of time for a given level of outputs and measure actual performance against such standards.



*Example:* Standards of labour and material that are established for a production operation.

The terms are sometimes used in a comparative rather than in an absolute sense e.g. Responsibility Centre A is more efficient than Responsibility Centre B, either (a) if it uses less resource than Responsibility Centre B, but has the same output or (b) if it uses the same amount of resources as Responsibility Centre B or has a greater output than Responsibility Centre B. In many responsibility centres, a measure of efficiency can be developed that relates actual costs to same standard not a very accurate measurement but only an approximation.

**Notes**

4. ***Process measurement of performance:*** Here, the emphasis is the production process in the measure.



*Example:* The quality of production during a production process to infer something about the quality of the final output before it is delivered or produced.

5. ***Effectiveness as measure of performance:*** Effectiveness is determined by the relationship between the output of responsibility centre and its objectives. The more this output contributes to the objectives, the more effective the unit.
6. ***The Role of Profit:*** The major objectives of any profit oriented organization are to earn a satisfactory profit. Thus, profit is an important measure of effectiveness. Again, since profit is the difference between revenue (a measure of output) and expense (a measure of input), it is also a measure of efficiency. Thus, profit measures both effectiveness and efficiency.



*Example:* Services rendered by accounting department to the organization

#### 4.1.1 Purpose of Responsibility Centre

The idea behind the hierarchy of responsibility centres and the responsibility accounting system is to distribute to the decentralized organizational submits responsibility for various elements of ROI - each responsibility centre has assigned to it measures of performance that are appropriate to the elements of cost, quality, revenue and investment that are assigned to that responsibility center. Rewards are made in accordance with performance. The combination of responsibility centres, measures of performance and rewards, knits together decentralized centres of decision making so as to pursue effective achievement of overall organizational goal that includes profit and ROI.

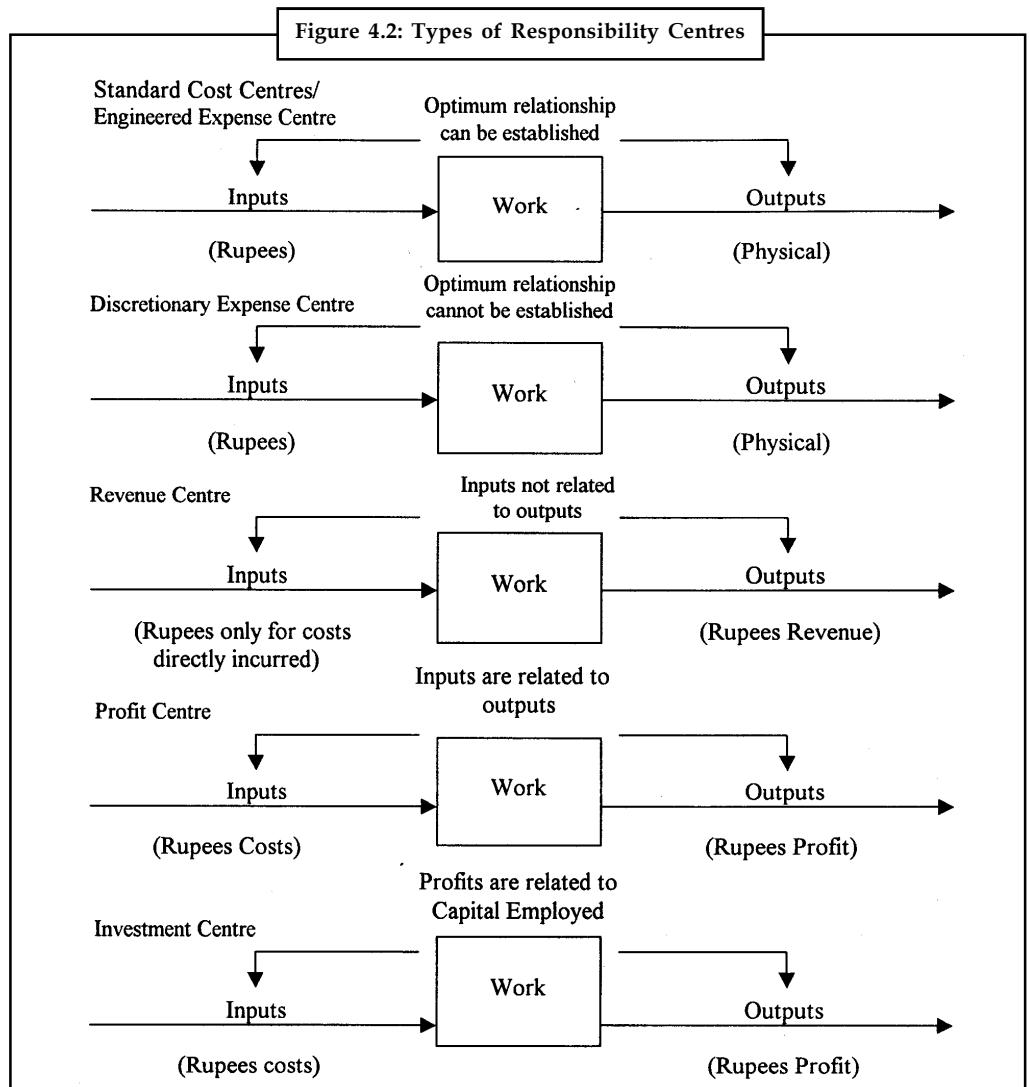
$$\text{ROI} = \frac{\text{Net profit after tax (1-tax\%)}}{\text{Invested capital}} = \frac{\text{Net profit after tax (1-tax\%)}}{\text{Sales Revenue}} \times \frac{\text{Sales}}{\text{Invested Capital}} = \text{Net profit as a percentage of sales revenue} \times \text{turnover of investment in relation to sales revenue}$$

#### 4.1.2 Types of Responsibility Centres

There are at least four different types of responsibility centres classified according to the nature of the monetary inputs and/or outputs that are measured for control purposes: revenue centres, expense centres, profit centres and investment centres. Their respective characteristics are shown in Figure 4.2.

1. In revenue centres, output is measured in monetary terms.
2. In expense centres, inputs are measured in monetary terms.

- Notes**
3. In profit centres, both revenues (output) and expenses (input) are measured.
  4. In investment centres, the relationship between profit and investment is measured.



*Example: Cost center:* usually a production center or service department.

*Profit center:* individual departments of retail stores and branch offices of banks.

*Investment center:* subsidiary companies.

## Self Assessment

Multiple Choice Questions:

1. What is the rate of net profit to invested capital?
 

(a) Profit margin	(b) Return on investment
(c) Sales revenue	(d) None of these

## 4.2 Revenue Centres

In a revenue centre, outputs (revenues) are measured in monetary terms, but no formal attempt is made to relate inputs (i.e., expenses or costs) to outputs. Revenue centres are, therefore, marketing organizations that do not have profit responsibility. Actual sales or orders booked are measured against budgets or quotas.

Each revenue centre is also an expense centre so far as marketing expenses for that responsibility centre. The primary measurement, however, is revenue. Revenue centres are not charged for the cost of goods that they market. Consequently, they are not profit centres, because this important expense item is omitted.

The manager of revenue centre does not have knowledge to make the cost/revenue trade off required for optimum marketing decisions. Therefore, responsibility for this type of decision cannot be delegated to a revenue center manager. For instance, revenue centres typically do not have authority to set selling prices.



### *Caution*

## Critical issue under responsibility accounting

- Can control all costs and revenues at some level of responsibility within the company?
  - All costs controllable by top management
  - Fewer costs controllable as one moves down to lower levels of management
  - Controllable costs – costs incurred directly by a level of responsibility that are controllable at that level
  - Non-controllable costs – costs incurred indirectly which are allocated to a responsibility level.



**Notes** Revenue Centres typically do not have authority to set selling prices.

### **4.3 Expense Centres**

Expense centres are responsibility centres whose inputs, or expenses are measured in monetary terms, but in which outputs are not measured in monetary terms. Expense centres are of two types: (based on two types of costs)

1. ***Engineered costs/Standard costs:*** These are those for which the ‘right’ or ‘proper’ amount of costs can be estimated with a reasonable degree of reliability. Costs incurred in a factory for direct labour, material, components, supplies and utilities are examples.
  2. ***Discretionary costs:*** (also called managed costs) are those for which no such engineered estimate is feasible, the amount of costs depends on management’s judgement about the amount that is appropriate under the circumstances.

<b>Notes</b>	<p><b>Engineered expense centres/ Standard cost centres:</b> They have the following characteristics:</p> <ol style="list-style-type: none"><li>1. Their input can be measured in monetary terms.</li><li>2. Their output can be measured in physical terms.</li><li>3. The optimal rupee amount of input required to produce one unit of output can be established.</li></ol>
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In an engineered expense centre/standard centre, the output multiplied by the standard cost of each unit produced represents what the finished product 'should' have costed. When this cost is compared to actual costs, the difference between the two represents the efficiency of the organizational unit being measured.



*Example:* Manufacturing operations that employ some form of standard cost, warehousing, distribution and similar units within the marketing organizations. Similarly, certain responsibility centres within administrative and support departments for instance, accounts receivable, accounts payable and payroll sections in the controller's department; personnel records and canteen in the human resources department, shareholders' records in the corporate secretary department and company motor pool; perform repetitive tasks for which standard costs can be developed. These engineered expense centres are located within departments that are discretionary expense centres.

It is necessary to note that apart from cost above, there are other important tasks for engineered expenses centres to perform i.e., the type and level of production are specified with specific quality standards, so that manufacturing costs may not be minimized at the expense of quality. Further, managers of engineered expense centres are responsible for activities such as: training and employee development that are not related to current production; their programme reviews include an appraisal on how well they carry out these responsibilities.



*Notes* It may also be noted, that there are few, if any, responsibility centres in which all costs items are engineered. Process in highly automated production departments, the use of indirect labour and various services can vary with management's discretion.

Thus, the term engineered expense centre refers to responsibility centres in which engineered costs predominate, but it does not imply that valued engineering estimates can be made for each and every cost item.

#### **4.3.1 Discretionary Expense Centres**

The word discretionary means that management has decided on certain policies that should govern the operations of the company. For example, manufacturer may grant an advertising allowance to a regional distributor of 10% per 1000 pieces of some products.



*Example:* Administration and support centres, R&D Centres and marketing centres.

Management view about the proper level of discretionary cost is subject to change. Dramatic changes may occur when a new management takes over.

There are three points in the control of discretionary expense centres. *First*, the management control system helps only in expense control. The budget for this type of expense centres represents the planned inputs to the expense centre.

*Second*, the difference between budgeted and actual expense is not a measure of efficiency. It is simply the difference between the budgeted input and the actual input.

Notes

*Third*, the financial control system measures neither the efficiency nor the effectiveness of these responsibility centres. It is necessary, therefore, that non-financial measures and judgements be employed in evaluating their performance.

**Committed expenses:** These are expenses that cannot be changed by the responsibility centre manager during the budget year or expenses that can be changed only in extraordinary circumstances. Depreciation is fixed by the amount of depreciable assets in place during the year and can be changed only by the disposal or addition of assets. Other examples are long-term leases, salaries of key personnel. These amounts are not useful for management control purposes; they are included in the budget to show the overall profitability of business units and to indicate to responsibility centre managers the size of the resources that they use. In judging actual performance, the actual amount is set equal to the budgeted amount, so no variance develops.



*Task* Take an example of any public sector enterprise and write about responsibility accounting and its responsibility centres.

**Approaches to budgeting with reference to engineered / standard and discretionary costs:** The starting point in preparing the budget is the current level of spending. The budgetee adjusts these amounts for anticipated inflation, cost implications of the changes in the job to be done and in some cases for anticipated productivity improvements. In some companies, the preparation of budget is preceded by a zero base review.

In the case of engineered expense centre/ standard cost centre, management must decide whether the proposed operating budget represents the cost of performing a task efficiently for the coming period. Once that is decided, based on the actions of other responsibility centres such as: marketing department's ability to generate sales, magnitudes of the tasks is determined.

In the case of discretionary cost centre, while formulating the budget, managements' principal task is to decide on the magnitude of the job that should be done, because based on such job expenses/resources are budgeted. The following questions are asked about a discretionary expense budget proposal:

1. What are the precise decisions that management should make?
2. Does the proposal include all the available information pertinent to making these decisions?
3. Does the proposal include irrelevant information which, at best, will tend to observe the real issues?

These tasks can be divided into two types: continuing and special. Continuing tasks are those that continue from year to year, for example, financial statement preparation by the controller's office. Special tasks are one-time projects, for example, developing and installing a profit budgeting system in a newly acquired division.

#### ***Other Characteristics with Reference to Engineered/Standard Costs and Discretionary Costs***

1. **Cost variability:** In discretionary expense centres, cost tends to vary with volumes from one year to the next, but they tend not to vary with short-term fluctuations in volume within a given year. Whereas, costs in engineered expense centres/standard centres are expected to vary with short-run changes in volume. Hence, in preparing budgets for discretionary expenses centres, managements tend to approve a change in their size that

<b>Notes</b>	corresponds to changes in budgeted sales volume i.e., additional personnel are budgeted when volume is expected to increase, and lay-offs are planned when volume is expected to decrease. Since personnel costs and personnel-related costs are by far the largest expense item in most discretionary expense centres; the annual budgets for these cost centres tend to be a constant percentage of budgeted sales volume.
2.	<b>Type of financial control:</b> Financial control exercised through an operating expense budget in an engineered expense centre/standard centre attempts to minimize operating costs by setting a standard and reporting actual costs against this standard. Costs are minimized by motivating line managers to attain maximum efficiency and by giving higher management a means of evaluating the efficiency of departmental management. The main purpose of a discretionary expense budget, on the other hand, is to allow the superior to control costs by participating in the planning. Costs are controlled primarily by deciding what tasks should be undertaken and what level of effort is required. Thus, in a discretionary expense centre, financial control is exercised at the planning stage before the amounts are incurred.

#### **4.3.2 Control Aspects of some Discretionary Expense Centres**

***Admin and support centres:*** These include senior corporate management and business unit management alongwith the managers of the supporting staff units. Support centers are units that provide services to other responsibility centres.

The control of admin and support centres is difficult because of:

**Problems inherent in measuring output:** Some staff activities such as payroll accounting are so routine that their units are in fact, engineered expense centres. In other activities, the principal output is advice and service - functions that are virtually impossible to quantify, much less evaluate, since output cannot be measured, it is not possible to set standards against which to measure financial performance. Thus, a budget variance cannot be treated as either efficient or inefficient performance.

**Lack of goal congruence:** Typically, managers of administration, staff officers strive for functional excellence but to develop ideal system or programmes or function will become too costly relative to the additional profits that perfection may generate.

The proposed budget for an admin or support centre usually consists of list of expense items within the current years' actual expenses. Some companies have a more elaborate presentation with the following components:

1. A section covering the basic costs of the centre including the costs of being in business plus the costs of an intrinsically necessary activities for which no general management decisions are required.
  2. A section covering the discretionary activities of the centre including a description of the objectives and estimated costs of each.
  3. A section fully explaining all proposed increases in the budget other than those related to inflation.

## Self Assessment

## Multiple Choice Questions:

4. The various branches of a bank, a manufacturing unit and various division of a multi division organization can be considered as:
- |                     |                        |
|---------------------|------------------------|
| (a) Expense centres | (b) Revenue centres    |
| (c) Profit centres  | (d) Investment centres |

Notes

#### **4.4 Marketing Centres**

Two very different types of activities are grouped under the heading of marketing - one relating to filling of orders, the other group of activities relate to efforts to obtain orders and obviously take place before an order is received.

The first activity (also called logistic activities) are those involved in moving goods from the company to its customers and collecting the amounts due from customers in return. These activities include transportation to distribution centres, warehousing, shipping and delivery, billing and related credit function and collection of accounts receivable.



*Caution* The responsibility centres that perform these functions, some of them are engineered expense centres that can be controlled through imposing standard costs and adjusting budgets to reflect these costs at different levels of volume.

Marketing activities are those undertaken to obtain orders for company products which include test marketing, the establishment, training and supervision of the sales force, advertising and sales promotion. These are basically discretionary expenses and depending on company's policy the expenses are budgeted. Further, though it is easy to measure a marketing organization's output, evaluating the effectiveness of the marketing effort is much more difficult. This is because changes in factors beyond the marketing departments control.



*Example:* Chronic Condition or the actions of competitors/ may invalidate the assumption on which the sales budgets are based.

The third activity is the generation of revenue which is, usually, evaluated by comparing actual revenue and physical quantities sold with budgeted revenue and budgeted units respectively.

#### **4.5 Research and Development Centres**

The control of research and development centers is difficult because of:

1. ***Difficulty in relating results to inputs.*** The results of R&D is difficult to measure quantitatively but semi-tangible outputs in the form of patents, new products or new processes but the relationship of output to input is difficult to appraise on an annual basis because the completed 'product' of an R&D group may involve several years of effort.
2. ***Lack of goal congruence:*** e.g. the research manager typically wants to build the best research organization money can buy even though may be more expensive than the company can afford. Further, research people do not have sufficient knowledge of (or interest in) the business to determine the optimum direction of the research efforts.

The activities conducted by R&D centre lie along a continuum with basic research at one extreme and product testing at the other. Basic research has two characteristics: (1) it is unplanned with management at best specifying the basic area to be explored and (2) there is often significant time lapse between the initiation of research and the introduction of a successful new product.

<b>Notes</b>	<p>Since financial controls have little value in managing basic research activities, alternative procedures are often employed. In some companies, basic research is included as a lump sum in the research programme and its budget. In some, the specific allowance is made for basic research, but there is an understanding that scientists and engineers can devote the part of their line for basic research subject only to the informal agreement of their supervisor.</p> <p>For projects involving product testing, however, it is possible to estimate the time and financial requirements - perhaps not as precisely as possible but with sufficient accuracy to permit a reasonably valued comparison of actual and budget amounts.</p> <p>As the project moves along the continuum from basic research, to applied research, to development, to production engineering, to testing the amount spent per year tends to increase substantially.</p> <p><b>R&amp;D Programme:</b> There is no scientific way of determining the optimum size of an R&amp;D Budget. Many companies use a percentage of average revenues as a base. The specific percentage applied is determined in part by comparing with competitors' R&amp;D expenditures and in part by the company's own spending history. Depending on the circumstances, senior management may authorize a large amount in budget if it appears that there has been a significant breakthrough.</p> <p>The R&amp;D programme consists of list of programmes plus a blanked allowance for unplanned work; it is usually reviewed annually by senior management. The review is often conducted by a research committee consisting of CEO, the research director, and the production and marketing manager. The committee makes broad decisions on the projects to be undertaken, which to expand, which to cut back and which to discontinue. The total amount of budget is allocated to different projects, which is highly subjective.</p> <p>For measurement of performance, the types of financial reports on R &amp; D are prepared. The first type compares the latest forecast of total cost with the approved amount of each active project and circulated to executives who control research spending. The second report (financial) consists of comparison between budgeted expenses and actual expenses in each responsibility centre. Neither type of reports informs management the effectiveness of the research efforts.</p> <p><b>Benchmarking and Cost Management:</b> Benchmarking is the continuous process of comparing and measuring an organization's business processes against those of business leaders anywhere in the world. The objective is to identify and understand best practices; and the best practice is simply, the best way to execute a process.</p> <p>We have seen that in engineered expense centre/standard cost centre, finance control is exercised by setting a standard for performing the task and reporting actual costs against this standard. While setting the standard, we can get comparable standards from other operating units/competitors in the process are called benchmarking.</p> <p>Similarly, in discretionary expense centre, some of the logistic activities e.g. transportation of the goods from the company to its customers, billing and related credit function and collection of accounts receivable, can be controlled through setting up standards and budgets that are adjusted to reflect the costs at different levels of volume. While setting up standards, benchmarking with other units/competitor unit is possible.</p> <p>The true power of benchmarking lies in the ability to apply the insight gained from another organization's best practices – with the full understanding that it is adapting them or not adapting them. No single best practice works anywhere. In fact, the term "best practices" is something of a misnomer.</p>
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**Notes**

*Notes* A practice can be deemed “best” only in the context of a particular company’s culture, its strategies, its use of technology, its product’s life cycles and its customers’ needs and wants.

## **Self Assessment**

Multiple Choice Questions:

5. The profitability of a profit centre can be measured in terms of:
  - (a) Contribution margin
  - (b) Contribution margin and income before taxes
  - (c) Contribution margin, income before taxes and direct divisional profits and
  - (d) Contribution margin, income before taxes, direct divisional profits, and net income.

## **4.6 Profit Centres**

A profit centre is a responsibility centre in which financial performance is measured in terms of profit (i.e., the difference between the revenues and expenses) inputs are measured in terms of expenses and outputs are measured in terms of revenues. Both the elements of accounting information – cost (input) and revenues (output) are considered. Therefore, in a profit center, the measures of performance is better and broader than in an expense centre since in case of expense centre, the accounting system measures only one element (i.e., cost) whereas, in a profit centre both the elements, cost as well as revenue is evaluated in monetary terms. The difference between revenues and costs is profit. Each profit centre is a relatively independent operating unit and its manager must have significant control over most operating decisions that affect profit.



*Example:* Volume of production, methods of operation, and cost of goods sold pricing and product mix.

In a financial organization, the profit centre as a responsibility center is at the CEO’s level since at that level, he is held responsible for profits at that level, costs and revenues can be traceable. In divisionalisation, the manager of each major unit is responsible for both the manufacture and marketing and the term profit centre concept applies at that level.

Profit centre can be divided into (i) natural profit centre and (ii) constructive profit centre. Natural profit centre e.g. a product division, uses inputs (costs) and produces outputs (revenues) i.e., sales to outside customer. This profit centre is just like an independent firm. A constructive profit centre as the name indicates has been constructed as a profit centre. As for example, the computer centre, it uses input (cost) and produces output i.e., services to other departments. If we want to calculate the monetary value, the computer centre becomes a profit centre, otherwise it is logically an expense centre.

Since in a profit centre, there are financial measures of the output as well as of the input, it is possible to measure the efficiency and effectiveness of performance in financial terms. Profit analysis can be used for the performance evaluation of division and its divisional manager, since in a profit center, you require all the data needed in an expense control as well as additional data regarding revenues. Therefore, the management can determine whether the division was efficient in the utilization of resources and whether the division was effective in attaining its

**Notes** objective i.e., to earn satisfactory profit. The criteria for satisfactory profit may be budgeted/past profit in the division/profits of other similar divisions/some combination of them.

Profit as a performance is based on revenues and expenses directly traceable to the division and can be avoided if the division is closed down. The concept of divisional profit is referred to as "profits contribution" or "incremental profit." The divisional profits are before taxes since taxes are paid on the basis of profit of the entire company, therefore, excluded from the calculation of divisional profit.



*Did u know?* The sum total profits of all the divisions will not necessarily be equal to the profit of the entire firm. The reasons for difference may be costs not attributable to any single division are excluded while computing divisional profits.

#### **4.6.1 Advantages of Profit Centres**

1. The quality of decisions may improve because they are being made by managers closer to the point of decision.
2. It provides a powerful tool for measuring how well the profit centre has performed.
3. The speed of operating decisions may be increased since they do not have to be referred to corporate headquarters.
4. The profit centre resembles a business in miniature form and like a separate firm, its profits are calculated. The managers are motivated to take decisions about inputs and outputs in such a way, that profit of a profit centre is maximized. The profit centre acts as a good training ground for general management responsibility. Further, managers subject to fewer corporate restraints are freer to use their imagination and initiative.
5. The profit centre makes decentralized organization possible. Top management can safely delegate the authority to the divisional managers because the profit centre reports provide adequate information about how well the operating managers are doing their jobs. It gives a better and broader measurement of performance than the expense centers. If the managers are responsible for both revenue and expense aspects of performance (profit centre), the contribution of each manager to the goal of the entire organization is easier to measure than when no single manager is responsible for both revenues and expenses (expense centers). Further, profit consciousness is increased since managers who are responsible for profits will constantly seek ways to increase them.

#### **4.6.2 Limitations and Problems of Profit Centre**

The profit centre has the following limitations:

1. *Decentralized decision-making* will force top management to rely more on management control reports than on personal knowledge of an operation, entailing loss of control.
2. It cannot be used for all responsibility centres, the following points are to be considered:
  - (i) Extra record-keeping is necessary to compute input and output in monetary terms,
  - (ii) Unless the divisional managers of responsibility centres have reasonable authority to decide on the quality/quantity of outputs or on the relation of output to costs, a profit centre will be of a little use as a control device,
  - (iii) When a responsibility centre is required by management to provide service to other responsibility centres, the service department cannot be considered as a profit centre e.g. internal audits,

- | Notes  |  |
|--|--|
| <p>(iv) If the output of a product/division is fairly homogeneous, a profit centre may not offer substantial advantage (e.g. cement),</p> <p>(v) There may be friction between profit centres. It may generate too much interest in the short-term profit exposures than the long-term results.</p>  |  |
| <p>3. If headquarters management is more capable or better informed than the average profit centre manager, the quality of decisions at the unit level may be reduced.</p>   |  |
| <p>4. <b>Measurement of expenses:</b> Some expenses are incurred for the organization as a whole, how these expenses are to be considered for the profit centre evaluation, is another matter where there is scope for the difference of opinion.</p>  |  |
| <p>5. <b>Transfer prices:</b> A transfer price is a price used to measure the value of goods/services furnished by a profit centre to another responsibility centre within a company. The determination of an appropriate transfer price is one of the major problems of profit centres. The implication of the transfer price is that for the selling division (the division from where goods/services are being transferred), it will be a source of revenue, whereas, for the buying division (the division which is receiving/acquiring the good/services), it is an element of cost. It will, therefore, have a significant bearing on the revenues, costs and profits of responsibility centers. Hence, the need for correct determination of transfer prices. The determination is complicated because a wide variety of alternative methods are available.</p> |  |
| <p>6. Competent general managers may not exist in a functional organization because there may not have been sufficient opportunities for them to develop general management competence.</p>  |  |
| <p>7. There is no completely satisfactory system for optimizing the profits of each individual profit centre that will optimize the profits of the company as a whole.</p>   |  |

#### 4.6.3 Other Profit Centres

In addition to business units, there are other profit centers which are not natural profit centers but constructed profit centres. Some examples are given below:

1. **Marketing in a functional organization or in business units:** A marketing activity can be made into a profit centre by charging the cost of the goods sold to the marketing manager. A transfer price provides the marketing manager with the relevant information to make the optimum revenue/cost trade-offs, since managers are measured on profitability, there is a check on how well these decisions are being made. Also, this gives motivation to managers to maximize profits. The transfer price should be based on standard cost and not on actual cost of products sold. This separates manufacturing cost performance from the marketing performance.

The marketing should be given a profit responsibility when the marketing manager is in the best position to make the cost/revenue trade-offs as for example, different conditions existing in different geographical areas e.g. a foreign marketing activity. In such a situation, it is difficult to centrally control such divisions as how to market a product, how much to spend on sales promotion, how to train the salesman or dealers, etc.

2. **Manufacturing:** The manufacturing activity is usually an expense centre and the management of such activities is judged on the basis of performance against standard costs and overhead budgets. This measure can cause problems since it does not necessarily indicate how well the manager is performing all aspects of the job e.g. manager may skip on quality control, shipping products of inferior quality to obtain standard cost credit or

- Notes**
- the manager may be reluctant to interrupt production schedule to produce a rush order for the customer or the manager may lack the incentive to produce goods that are difficult to produce.
- An overall measure of the manufacturing organization is obtained if the organization is made into a profit centre. Some authors maintain that manufacturing units should not be made into profit centres unless they sell a large fraction of their output to outside customers. Many companies nevertheless create profit centres for such units. They believe that, if properly designed, the system can create almost the same motivation that exists in sales to outside customers.
3. **Service and support units:** Maintenance units, information technology, transportation units, engineering units, consulting units, customer service units and similar support units of an organization can be made into profit centres. These may be headquarters units that service divisions or they may be fulfilling similar functions within business units. They charge customers for services rendered with the financial objective of generating enough business so that revenues may equal expenses. Usually, the units receiving the services have the alternative of procuring them from an outside vendor if a vendor can offer services of equal quality at a lower price.
- Managers of such service units are motivated to control costs, otherwise customers will go elsewhere. Managers of the receiving units are motivated to make decisions about whether a request for service is worth the price.
4. **Other organizations:** A company with branch operations that are responsible for marketing the company's products in a particular geographical area is often natural for a profit centre type of organization. Even though the branch managers have no manufacturing or procurement responsibilities, profitability is often the best single measure of their performance. Furthermore, the profit measurement is an excellent motivating device. Thus, the individual stores of most retail chains, the individual restaurants in fast food chains and the branches of many commercial banks are profit centers.

#### 4.6.4 Profit Centre Evaluation

There are two types of profitability measurements used in evaluating an organization as a whole:

1. There is the measure of management performance which focuses on how well the manager is doing. This measure is used for planning, co-ordinating and controlling the profit centres day-to-day activities and as a device for providing the proper motivation for its manager.
2. There is a measure of economic performance which focuses on how well the profit centre is doing as an economic activity.

The messages conveyed by these two measures may be quite different from each other.



*Example:* The management performance report for a branch store may show that the stores manager is doing an excellent job while the economic performance may show that because of economic and competitive conditions in its area, the store is a losing proposition and should be closed down.

The necessary information for both purposes cannot be obtained from a single set of data. Since the management report should be prepared periodically while the economic report is prepared only on those occasions when economic decision is made, hence, considerations relating to management performance measurement have first priority in system's design i.e., the system

should be designed to measure management performance routinely with economic performance being derived from these performance reports, as well as from other sources.

**Notes**

Profit centre evaluation is based on income statement format. The conventional income statement can be recast to highlight the various sub-categories. The sub-categories are done based on criteria of variability, controllability and attributability. According to the variability attribute, costs that are neither directly controllable by a particular segment nor attributable to it, are excluded from the measurement of divisional performance e.g., administrative salaries, property, taxes, etc. The controllability concept implies that the performance attributes should be controllable by the divisions/responsibility centers. The attributability concept refers to the outcomes/performance characteristics that are directly associated with or directly traceable to, the existence and operation of a segment. The main sub-categories in a typical segmented income statement are:

1. **Sales and other major revenues:** Sales made to outside customers are usually, easy to identify and measure. There may be difficulty in measuring products/services sold by one division because of problems associated with transfer pricing.

To evaluate a segment's sales revenue, they must be compared with other performance measures such as: (i) prior period sales of the same segment, (ii) sales volume of a comparable department of the same firm, (iii) sales of other companies in the same industry and (iv) the divisions budgeted sales volume. These comparisons may be made in terms of rupees value, physical volume, and rate of changes or variances from the budgeted amount.

2. **Controllable variable costs:** Cost in this group means directly controllable by the divisional managers and vary according to the activity levels, namely: divisions variable cost of goods sold and variable administrative and marketing costs. These costs should be evaluated using variance analysis, trend analysis and variable cost to sales ratio, comparison with the segments of the same firm and with the similar segments of other companies in the same industry.
3. **Controllable contribution margin:** Sales revenue minus controllable variable costs equals the division's controllable contribution margin. It can be used to evaluate the ability of a division to sustain itself, to make a contribution to the fixed costs of divisions, common costs of the firm and profits of the organization. The evaluation should be based on variance analysis.
4. **Controllable fixed costs:** The controllable fixed costs are those fixed costs of a period directly and exclusively related to the decision of the management of a division.



*Example:* Divisional rent charges for equipment and property and executive's salaries etc.; such costs should be compared with budgeted fixed costs to evaluate performance.

5. **Controllable segment margin:** This is the excess of controllable contribution margin over controllable fixed costs. This should be compared with the previous period's results and predetermined budgeted amounts.
6. **Attributable segment costs:** These are costs that are not controllable by a divisional manager and which could have been avoided, had the divisions been withdrawn.



*Example:* Division manager's salary, depreciation, rent, insurance on facilities used exclusively by the division but acquired as a result of decision made at higher management levels.

Similarly, interest charges on debt that was incurred to support the operation of the division but was decided outside the division. These costs are not directly controllable by

- Notes** the divisional manager but should be considered in overall segment performance by comparison with the budget and with the division's results for the prior period.
7. **Segment profit contribution:** This is the difference between controllable segment margin and the attributable segment costs. Variance analysis, percentage analysis of individual costs and revenues, and trend and time period analysis can be used to evaluate the various components of segment profit contribution. Comparison can be made with industry standards.
  8. **Common firm wide costs:** These costs are incurred for the firm as a whole and do not relate specifically to any segment. These costs are to be allocated to the segments on some appropriate basis, so as to reflect the correct profitability of the segment. The basis of allocation reflects the relative amount of expenses that is incurred for each segment or the amount of benefit received by each unit.



*Notes* There are two arguments against such allocations. First, the costs incurred by corporate staff departments such as CEO's office, finance, accounting and human resources are not controllable by profit centre managers. Second, it is difficult to find a proper acceptable basis for allocating the costs that would properly reflect the relative amount of corporate costs caused by each profit centre.

- There are, however, arguments for and against allocating corporate overheads to profit centres:
- (i) Profit centre performance can be comparable to competitors.
  - (ii) Corporate service units have a tendency to "empire build" to increase their power base and make their departments excellent, without regard for their values to the company. If such costs are allocated to profit centres, the profit centre managers will raise questions about the amount of corporate overhead, this helps to keep a check on spending at the corporate office.
  - (iii) The profit centre manager is given the message that the profit centre has not earned a profit if it recovers all costs, including a share of allocated corporate overhead. Thus, profit centre managers would be motivated to make optimum long-term marketing decisions (pricing, product mix and so on) because they must keep in mind that they must recover their share of corporate overhead.
  9. **Segment net income:** This is equal to the difference between the segment profit contributions minus the allocated common firm wide costs. The performance of profit centre is appraised by comparison of actual results with budgeted amounts. In addition, data on competitors and industry provide a good cross check on the appropriateness of the budget.

**Illustration of Profit Centre Evaluation:** ABC Ltd. employs a budgetary control system which measures performance based on its product divisions A and B. The budgeted and actual sales for a particular month are as follows:

Division	Sales Quantity		Sales Revenue ₹	
	Budget	Actual	Budget	Actual
A	40000	48000	400,000	480,000
B	80000	80000	400,000	480,000

The standard unit controllable variable costs are ₹ 4 and ₹ 2 for A and B respectively. The budgeted controllable fixed costs for the month are ₹ 40,000 each for products A and B. The attributable segment costs budgeted are ₹ 80,000 and ₹ 120,000 for products A and B.

Assume there is no opening and closing inventories, actual variable costs for the month were ₹ 168,000 and ₹ 192,000 for division A and B respectively. Actual controllable fixed costs amounted to ₹ 44,000 for division A and ₹ 52,000 for division B. Actual attributable segment costs are ₹ 88,000 for A and ₹ 1,28,000 for B. The common firm wide costs are assumed to be ₹ 96,000 to be apportioned on the basis of segment sales revenue.

**Notes**

Prepare performance evaluation report if ABC Ltd. employs profit centre basis of divisional performance.

**Solution:**

**Performance Evaluation Report for the Month (000)**

	Product Line A			Product Line B			Total		
	Budget ₹	Actual ₹	Variance ₹	Budget ₹	Actual ₹	Variance ₹	Budget ₹	Actual ₹	Variance ₹
Sales Revenue	400	480	80F	400	480	80F	800	960	160F
<i>Less:</i> controllable variable costs	160	168	8 A	160	192	32A	320	360	40A
Controllable contribution margins	240	312	72F	240	288	48F	480	600	120F
<i>Less:</i> controllable fixed costs	40	44	4 A	40	52	12A	80	96	16A
Controllable segment margin	200	268	68F	200	236	36F	400	504	104F
<i>Less:</i> attributable segment costs	80	88	8 A	120	128	8 A	200	216	16 A
Segment profit contribution	120	180	60 F	80	108	28F	200	288	88F
<i>Less:</i> common firm wide costs	48	48	-	48	48	-	96	96	-
Net income	72	132	60F	32	60	28F	104	192	88F

F = Favourable    A = Adverse



*Notes* Common firm wide costs allocated based on budgeted sales revenue.



*Task* Find out more about marketing centres and engineered expense centres.

**Notes****Use of Profit Centre as a Measurement of Performance**

The profit centre as a measurement of performance can be used for the following purposes:

1. **Evaluation and ranking of profit centres:** This can be done in relation to various types of profit goals. As discussed in earlier paragraphs, the various profit goals with reference to profit centre performance are: controllable contribution margin, controllable segment margin, segment profit contribution, contribution margin ratio, segment profit contribution rate and so on. In evaluating profit centers, we have to see whether individual segments have achieved their objectives and ranking can be given based on comparative performance of different segments.
2. **Decisions to modify operations of profit centres:** Profit centre performance assessment, guides decisions to modify operations of the profit centres. Modification in this context means expansion, contraction, addition or closure of the profit centre. The decision criterion in such cases would be the incremental effect on the overall profits of the company. In the short-run, assuming all attributable segment costs as constant, expansion or contraction in a profit centre operation will affect the controllable contribution margin (since in short-run, controllable fixed cost of the segment does not change).

In the long-run, changes in controllable fixed costs or attributable segment costs are to be considered. Similarly, how the decision will affect the common firm wide costs or the profit performance of other segments, are also to be considered.

**Illustration showing the use of 'Profit Centre Performance Evaluation'**

Segment income statement for a particular period in respect of 3 divisions X, Y and Z are given below:

	X	Y	Z	Total
Sales	12	16	20	48
Less controllable variable costs	4	8	12	24
Controllable contribution margin	8	8	8	24
Less direct fixed costs	2	4	2	8
Controllable segment margin	6	4	6	16
Less attributable segment costs	2.80	4.80	1.60	9.2
Segment profit contribution	3.2	(-0.80)	4.40	6.8
Less firm wide cost	-		-	2.8
Corporate net income	-	-	-	4.0

Based on segment profit contribution, the three divisions would be ranked as below:

- |      |   |          |   |
|------|---|----------|---|
| Rank | 1 | Division | Z |
| Rank | 2 | Division | X |
| Rank | 3 | Division | Y |

But since the three divisions show significant differences in sales value, contribution margin ratio, fixed costs and attributable costs, ranking them on the basis of segment profit contribution would seem to be unfair. A better alternative would be a comparison between actual and budgeted segment profit contribution.

Based on negative segment profit contribution for division Y i.e., Division Y's inability to recover all its fixed and attributable costs, can we conclude that it should be closed down.

In order to decide, whether to continue or discontinue division Y, it is necessary to find out whether all these fixed and attributable costs are avoidable, otherwise the closure of the division would cause a larger deficit to the corporate income.

## Notes

## Self Assessment

### Multiple Choice Questions:



## 4.7 Investment Centres

It is defined as a responsibility centre in which inputs are measured in terms of cost/expenses and outputs are measured in terms of revenues and in which assets employed are also measured. In other words, investment centres consider not only costs and revenues but also assets used in the division. As a responsibility centre, the performance of a unit would be measured in relation to the revenues / profits and the assets employed in a division. The essence of investment centre analysis is the relationship between the profits and the assets that are used to generate those profits. It may, therefore, be said to be an extension of profit centre, since it covers all the elements relevant to the measurement of the overall performance of the firm's/its various divisions. However, the investment centre is one step above a profit centre, in terms of the additional financial data (assets).

The investment centre analysis can be used as a basis for evaluating the contribution of a division as an entity as also the performance of a divisional manager. The measure of performance in an investment centre is based on the relationship between the profits/income and the assets employed in generating the profits.



**Notes** There are two ways to relate income to assets: (i) Return on Investment (ROI) analysis and (ii) Residual Income (RI) analysis or Economic Value Added (EVA).

**Notes**

**Return on Investment (ROI) Analysis**

The return on investment is defined simply as the ratio of profit to investment:

$$ROI = \frac{\text{Profit}}{\text{Investment}}$$

For example, if profit is ₹ 60,000 and investment is ₹ 400,000, the rate of return on investment is  $60000/400,000 = 15$  percent.

With reference to responsibility accounting, the ROI will be the segment return on investment (SROI). Symbolically,

$$SROI = \frac{\text{Segment Profit Contribution}}{\text{Segment resources/assets}}$$

The segment return on investment can be used both for operating performance measurement and managerial evaluation. Accordingly, there are two variations of segment return on investments, namely:

1. SROI (operating) =  $\frac{\text{Segment profit contribution before interest}}{\text{Segment total assets}}$
2. SROI (net) =  $\frac{\text{Segment profit contribution after interest}}{\text{Segment net assets}}$

The operating SROI is used for evaluating the total earning power of all assets directly employed by a segment regardless of the mode of finance, whereas, net SROI is an indicator of a division's ability to generate profit contributions in excess of direct cost of financing its operations.

Again, SROI can be viewed as the product of two components namely: segment profit contribution margin and segment assets turnover.

$$SROI = \frac{\text{Segment Profit Contribution}}{\text{Segment Sales Revenue}} \times \frac{\text{Segment Sales Revenue}}{\text{Segment Assets}}$$

Any action is beneficial that boosts sales, reduces assets or reduces costs while holding the other two factors constant.

***Advantages***

There are several advantages in using ROI to measure divisional/segment performance. These are as follows:

1. ROI is the generally accepted measure of overall performance. On a single page, the operating manager may get a summary of his entire controllable items, net earnings and investment. In one single figure, both the effectiveness and the efficiency of the division are highlighted.
2. ROI is a common number which can be used to compare divisions with each other, to measure the achievement of objectives and to use as a basis for rewarding good performance.
3. ROI is easily understood. The operating manager knows that he can improve ROI by improving - margins and by exercising better control over assets.

**Limitations**

**Notes**

ROI suffers from certain operational limitations. These are outlined below:

1. **Communication Problem:** Historically, accountants have used ROI in so many different contexts that operating managers have become confused.
2. **Problem with investment base:** The determination/measurement of the value of investments are referred to as "investment base". The divisional investment base requires:
  - (i) a precise definition of all elements that should be included and (ii) the value that should be assigned to them.

These are, however, operational problems in respect of these aspects since different practices are being followed and the measure of investment/assets is not standardized. Again, problems of measuring investments in assets with an investment centre falls into two categories viz. problems of allocation/apportionment and problems of valuation.

3. **Problems with earnings:** The objective of divisionalised profit reporting is to reflect those items of expenses over which the divisional manager has some degree of control. Another question is, to what extent corporate expenses should be allocated to the division? A further problem in measuring the return is difficult in applying generally accepted accounting principles to divisional earnings.



*Example:* One division of a company, for example, may be engaged heavily in R&D while another may have little R&D. The first division will suffer in comparison, because of the requirement to write off all R&D expenses in the year these are incurred.

4. **Fiscal periods and timing:** In a given year, different projects are in various stages of development. Each of these promises returns more than that in the first fiscal year and each will generate its own rate of discounted cash flow return. These are all taken on a year-to-year basis. The return generated vertically for a period of time is, therefore, somewhat arbitrary and can be largely dependent on accounting practices.
5. The use of ROI may distort allocation of resources in the firm.



*Example:* Consider a firm which is presently earning an overall ROI of 12 %. Two of its divisions A and B have ROI of 15 % and 10 % respectively. Division A has an investment base of ₹ 100 lakhs and income of ₹ 15 lakhs; Division B has an income of ₹ 10 lakhs and investment base of ₹ 100 lakhs. Division A has an investment opportunity which has an expected ROI of 14 % (income of ₹ 4.2 lakhs in relation to investment of ₹ 30 lakhs); Division B has an investment opportunity which has an expected return of 11 % (income of ₹ 3.3 lakhs in relation to investment of ₹ 30 lakhs). Division A is likely to reject the investment opportunity of earning 14 % ROI because it causes a decline in its divisional ROI. Yet this investment opportunity is desirable from the overall company point of view. Division B is likely to accept the investment opportunity of earning 11 % ROI because it enhances its division's ROI. Yet this investment opportunity is not desirable from the overall company point of view.

## **4.8 Economic Value Added (EVA) (Residual Income)**

An alternative measure of financial performance in an investment centre is segment.

Economic Value Added (EVA) is the amount in rupees that remains after deducting an "implied" interest charge from operating income. The implied interest charge reflects an opportunity cost, and is charged on the amount of assets in each investment centre. The rate of interest charge is

**Notes** equal to the minimum rate on investment specified by top management as part of the corporate strategic plan. Example A division has a budgeted income of ₹ 10 lakhs and a budgeted investment of ₹ 60 lakhs. The average cost of capital for the firm is 12 %. The budgeted residual income is:

Divisional Income	₹ 10 lakhs
Interest charge	
12% on ₹ 60 lakhs	7.20
Residual income/Economic value added	2.80

Different interest rates may be applied to different components of investment like Fixed assets, inventories, receivables and cash.

#### **4.8.1 EVA Approach (Stern Stewart Approach)**

During the 1990s, residual income has been refined and remained as Economic Value Added (EVA) by Stern Stewart Counseling Organization and they have registered EVA (TM) as their trademark.

The EVA Concept extends the traditional residual income measures by incorporating adjustments to the divisional performance measures against distortions introduced by generally accepted accounting principles (EAAP).

EVA can be defined as = Conventional divisional profit ± Accumulated adjustment – cost of capital charge on divisional assets.

Adjustments are made to the chosen, conventional divisional profit measures in order to replace historical accounting data with a measure of economic profit and asset values. Stern Stewart has developed approximately 160 accounting adjustments, but most organisations will only need to use about 10 of the adjustments. These adjustments result in the capitalization of many discretionary adjustments such as: research and development, marketing and advertising by spreading these costs over the periods in which the benefits are received. Therefore, adopting EVA reduces some of the harmful side effects arising from using financial measures. Also, because it is restatement of the residual income measure compared with ROI, EVA is more likely to encourage goal congruence in terms of asset acquisition and disposal decisions. Managers are also made aware that capital has a cost and they are thus encouraged to dispose off underutilized assets that do not generate sufficient income to cover their cost of capital. There are a number of issues that apply to ROI, residual income or its replacement (EVA). They concern determining which assets should be included in a division's asset base and adjustments that should be made to financial accounting practices to derive managerial information that is closer to economic reality.

EVA is, essentially, the surplus left after making an appropriate charge for the capital employed in the business. It may be calculated in any of the following apparently different, but essentially equivalent ways:

1. EVA = Net operating profit after tax-cost of capital × economic book value of the capital employed in the firm.
2. EVA = Economic book value of the capital employed in the firm ( return on capital – cost of capital)
3. EVA = [Profit after tax + Interest (1-marginal tax rate of the firm)] – cost of capital × economic book value of the capital employed in the firm.
4. EVA = Profit after tax – cost of equity × equity employed in the firm.

Let us illustrate the above by way of an example. M Co Ltd. Balance Sheet and Profit & Loss Account is given below:

**Notes**

₹ in million

<b>Balance Sheet as on 31-3-20X0</b>		<b>Profit and Loss Statement for the year ending as on 31-3-20X0</b>
Liabilities	Assets	
Equity 100	Fixed assets 140	Net sales 300
Debt 100	Net current assets 60	Cost of goods sold 258
		PBIT 42
200	200	Interest 12
		PBT 30
		Tax (30%) 9
		PAT 21

Further information provided:

1. Cost of equity 18%; Interest rate on debt 12%
2. Marginal tax rate 30%

*Solution:*

Post tax cost of debt is  $12 \times (1 - 0.3) = 8.4\%$

M employs debt and equity in equal proportion hence weighted average cost of capital is:

$$0.5 \times 18 + 0.5 \times 8.4 = 13.2\%$$

M Cos net operating profit after tax is = PBIT (1 – Tax rate) = 42 (1 – 0.3) = ₹ 29.4 million

And return on capital works out to  $29.4 / 200 = 0.147$  or 14.7 per cent

M Co's EVA can be worked out in the above four different yet equivalent ways:

1. EVA = Net operating profit after tax-cost of capital × economic book value of the capital employed in the firm.=  $29.4 - 13.2\% \times 200 = 29.4 - 26.4 = ₹ 3.0$  million
2. EVA = Economic book value of the capital employed in the firm ( return on capital – cost of capital) =  $200 (14.7 - 13.2) = ₹ 3$  million
3. EVA = [Profit after tax + Interest (1-marginal tax rate of the firm)] – cost of capital × economic book value of the capital employed in the firm.=  $[21 + 12(1 - 0.30)] - 13.2\% \times 200 = 29.4 - 26.4 = ₹ 3$  million
4. EVA = Profit after tax – cost of equity × equity employed in the firm =  $21 - 18 \times 100 = ₹ 3$  million

#### **4.8.2 Three Components of EVA**

*Net Operating Profit after Tax = Profit before interest and taxes (1 – tax rate)*

This definition is based on two principles: (i) Separate the investment and financing side of a firm. This implies that financing charges like interest and dividend are not considered when we look at profits or cash flows on the investment side. Financing charges will be reflected in the cost of capital figure used for discounting the profits or cash flows on the investment side. (ii) all analyses are to be done on post-tax terms.

**Notes**

**Cost of Capital**

Providers of capital i.e., shareholders and lenders want to be suitably compensated for investing in the capital of the firm. The cost of capital should have the following features:

1. It represents average of the costs of all sources of capital.
2. It is calculated in post-tax terms.
3. It reduces the risk borne by various providers of capital.

**Capital Employed**

To obtain the capital employed in the business, we have to make adjustments to the 'accounting' balance sheet to derive the 'economic book value' balance sheet. These adjustments are meant to reflect the economic value of assets in place rather than the accounting values as determined by inherently conservative historical cost-based generally accepted accounting principles.

**What Causes EVA to Increase**

EVA rises when:

1. The rate of return on existing capital increases because of improvement in operating performance. This means operating profit increases without infusion of additional capital in the business.
2. Additional capital is invested in projects that earn a rate of return greater than the cost of capital.
3. Capital is withdrawn from activities which earn inadequate returns.
4. The cost of capital is lowered by altering the financial strategy.

Numerical illustration of value creating strategies-

**Base Case**

Capital employed	₹ 10,000
Net operating profit after tax	₹ 2000
Cost of capital	15%
Return on capital	20 %
EVA = 10,000 (0.20 – 0.15) = 500	

**Strategy 1: Improvement in Operating Performance**

Net operating profit after tax increase from 2,000 to 2,250, due to greater operating efficiencies. This rises return to 22.5%. As a result EVA rises to 10,000 (0.225 – 0.15) = 750

**Strategy 2: Profitable Investment**

A new project requiring 10,000 is expected to earn a return of 18% thereby adding 1800 to Net Operating profit after tax. This project will increase EVA to 19% (the average of 20% and 18%), even though the consolidated return will decline.

$$\text{EVA} = \text{Capital employed} \times (\text{return on capital}) = 20,000 (0.19 – 0.15) = 800$$

Note that maximizing EVA is more important, not maximizing return on capital. Hence, the project should be accepted.

**Strategy 3: Withdrawal of Unproductive Capital****Notes**

1000 of working capital can be liquidated with only a marginal decline of net operating profit after tax. Net operating profit after tax will fall by just 50. Withdrawing this working capital would increase the rate of return to  $21.67\% (2,000 - 50)/(10,000 - 1000)$  and EVA to 600

$$\text{EVA} = 9000 \times (0.2167 - 0.150) = 600$$

**Strategy 4: Reduction in the cost of capital**

The capital structure of the firm is altered and this change lowers the cost of capital to 13%, without affecting anything else. As a result, EVA rises from 500 to 700.

$$\text{EVA} = \text{Capital employed} \times (\text{return on capital} - \text{cost of capital}) = 10,000 (0.20 - 0.13) = 700$$

**Measuring Net Operating Income after tax (NOPAT) and Capital Employed (CE): Adjustment for the variation in GAAP**

As we have seen, EVA is a function of net operating profit after tax (NOPAT) and capital employed and weighted cost of capital. The measurement of NOPAT and CE calls for adjusting for the variation in GAAP.

The accounting profession has worked hard since the early 1970s to make balance sheet and the income statement reflect the financial position and performance of the firm more accurately. In spite of such hard work, the General Accepted Accounting Principles (GAAP) have failed to generate accounting reports that reflect the economic reality. In reality, the association between accounting data and capital market values suggests that the usefulness of financial reports is rather limited. The gap between GAAP based accounting information and economic reality arises from the extreme conservatism followed in accounting practice. Accountants charge all outlays on intangibles on research and development, market development and employee training since they follow the principle "provide for all possible losses but anticipate no gains."

The basic reason for the accountants adopting conservatism approach is because early days they were preparing these statements primarily for the lenders whose perspective is different from the owners' and managers'. Security laws have contributed to conservatism. Accountants can be sued if they overstate earnings or assets, not if they underestimate them. Further, regulators have mandated several conservative rules because of the fear that managers may swindle investors by exaggerating earnings and assets.

To calculate EVA that is reliable guide to value creation, several adjustments are required to accounting earnings and accounting book value. The purpose of these adjustments is required to derive NOPAT figure that reflects economic performance and a capital figure that reflects the capital contributed by shareholders and lenders.

**Stern Stewart has identified more than 160 potential adjustments:** These relate to things like:

1. **Research and Development:** Outlays on R&D are truly investments in future products and processes. Yet GAAP requires companies to expense out (deduct from earnings) these outlays, as if they have no valuable payoff in future. For EVA purposes, the R&D outlays are capitalized and amortized over a period of time that represents the useful life on R&D. Stern & Stewart normally use an amortization period of 5 years.
2. **Strategic investments:** Normally, under the EVA system, the capital charge on an investment is deducted from the time the outlay is made-this injects the required discipline into investment decision making. Hence, managers may be reluctant to propose a strategic investment that has a gestation period of few years. During this period, the investment does not produce any returns but has to bear a capital charge, thereby adversely affecting

- Notes**
- the EVA. To overcome this, outlays on strategic investments are held back in suspense account and thus, are kept out from capital charge for calculating EVA, till the time the investment is expected to generate operating profits. In the meanwhile, capital charges are added to the suspense account so that the balance in that account may reflect the full opportunity cost (original investment plus capital charges thereon) of the investment.
3. **Expense recognition:** Companies incur substantial marketing costs to establish brands, enter new markets, expand capital base, and gain market share. Under GAAP, they are normally, treated as current period expenses though they are expected to generate benefits over a long period of time. Under the EVA system, these outlays are capitalized and appropriated over an appropriate period.
  4. **Depreciation:** In GAAP, the straight line method of depreciation works reasonably well. However, for significant amounts of long-lived assets, the use of straight-line method of depreciation in calculating EVA can be a hindrance towards new investments, since under the EVA system, the capital charge declines as the book value of the assets decreases on account of depreciation. Hence, the managers are reluctant to replace 'cheap' old assets with 'expensive' new assets. One method to eliminate this distortion may be to replace straight line depreciation with sinking fund depreciation. Under the sinking fund method, the annual depreciation is small initially, but rises over the life of the asset. It behaves like the principle payment in a mortgage. If the sinking fund method of depreciation is used, the sum of the depreciation charge and the EVA sinking fund method of depreciation is used, the sum of the depreciation charge and the EVA capital charge remains constant over time, exactly like the mortgage payment.
  5. **Restructuring Charges:** Under GAAP, a restructuring charge is treated as a loss on an investment that has turned bad. Such a charge leads to reduction in reported earnings and hence managers tend to postpone restructuring. Under the EVA system, a restructuring opportunity is welcomed as it facilitates a more productive deployment of capital. The solution is, instead of treating as a loss consider as restructuring investment in the balance sheet.
  6. **Taxes:** Companies use an accelerated method of depreciation (like the written down value method) for computing taxable profits for tax purposes and a slower method (straight line method) for shareholder reporting purposes. Hence, the provision for income tax as per GAAP earning statement (referred as book taxes) differs from the cash taxes a company actually pays. The differences between book taxes and cash taxes go into a liability account called deferred taxes which are presumably payable in future. The problem with this accounting treatment is that most companies never pay their deferred taxes. Hence, from economic point of view what matters is the tax the company pays now and not what it may have to pay in future. So, for calculating NOPAT, only cash taxes must be deducted. Correspondingly, deferred tax liability must be treated as quasi-equity and included as a part of shareholders' funds.
  7. **Marketable Securities:** Companies often hold marketable securities which do not represent capital used for generating operating profit. The investment in them should be excluded from the capital employed in the firm and the income from these investments should not be included in NOPAT.

### 4.8.3 Evaluation of EVA

Notes

#### Advantages of EVA

1. EVA combines profit centre and investment centre concepts. With EVA, management establishes a target profit or target rate of return for the business segment. Any income in excess of the target level is the residual income/EVA. To illustrate, the target rate of return for DD Ltd. is 20 % on total net assets. Total net assets are ₹ 800,000 and actual net income ₹ 200,000 so the target net income is  $800,000 \times 0.20 = ₹ 160,000$ . The EVA for the company is actual net income minus target net income = ₹ 200,000 – ₹ 160,000 = ₹ 40,000.
2. In case of EVA, different interest rates may be used for different types of assets e.g. low rates can be used for inventories while a higher rate can be used for investments in fixed assets. Furthermore, different rates may be used for different fixed assets to take into account different degrees of risk.
3. With EVA, all business units have the same profit objective for comparable investments. The ROI approach, on the other hand, provides different incentives for investments across business units.
4. The EVA in contrast to ROI, has a stronger positive correlation with changes in company's market share. Shareholders are important stakeholders in a company's market value. Shareholders are important stakeholders in a company.

Difference between ROI and EVA are shown in the following table:

ROI Method					(000)
Business Unit	Current Assets	Fixed Assets	Total Investment	Budgeted Profit	ROI Objective
A	60	60	120	24.0	20%
B	70	50	120	14.4	12
C	95	10	105	10.5	10
D	35	40	75	3.8	5
E	25	10	35	(1.8)	(5)

#### EVA

Business unit	Profit potential	Current assets	Rate	Regd. Ergs. On C/assets	F/A	Rate	Regs. Ergs. For F/A	Budgeted EVA
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(1)-(4)-(7)
A	24.0	60	4%	2.4	60	10%	6	15.6
B	14.4	70	4	2.8	50	10	5	6.6
C	10.5	95	4	3.8	10	10	1	5.7
D	3.8	35	4	1.4	40	10	4	(1.6)
E	(1.8)	25	4	1.0	10	10	1	(3.8)

From the first portion of the calculation (ROI Method), one can observe that only one business unit C is ROI objective consistent with the company-wide cut-off rate, and in no unit is the objective consistent with the company wide 4% cost of carrying Current Assets. Business unit A would decrease its chances of meeting its profit objective, if it did not earn at least 20% on added investments in either Current Assets or Fixed Assets, whereas, units D and E would benefit from investments with a much lower return.

**Notes** The EVA method (2nd portion of the calculation – EVA Method) corrects these inconsistencies in the following manners: the investments, multiplied by appropriate rates are subtracted from the budgeted profit. The resulting amount is the budgeted EVA. Periodically, the actual EVA is calculated by subtracting from the actual profits, the actual investment multiplied by the appropriate rates.

### **Limitations of EVA Analysis**

1. The EVA analysis does not necessarily eliminate the problem of comparing the performance of large and small divisions.



*Example:* A company has three divisions each of which earns a 25% return on its total net assets. However, the EVA of the divisions is significantly different.

Below are the data for three divisions:

	Division		
	X	Y	Z
Total net assets	₹ 100,000	₹ 500,000	₹ 1000,000
Net income	₹ 25,000	₹ 125,000	₹ 250,000
ROI on net assets	25%	25%	25%
Target net income (15% of net assets)	₹ 15,000	₹ 75,000	₹ 150,000
EVA (net income - target net income)	₹ 10,000	₹ 50,000	₹ 100,000

Each division earned the same rate of return on net assets, and each has the same percentage target net income requirement. Still the EVA measures are dramatically different among the divisions. This approach has a tendency to highlight the divisions that generate the largest rupee profits for the firm.

2. Most of the problems in measuring the divisional income and divisional investment base are also present in the measurement of EVA.
3. There is additional risk of selecting a fair and equitable measure of the required cut-off percentage (i.e., the cost of capital).
4. EVA can be readily transformed into ROI and many firms tend to convert EVA into ROI. The relationship between EVA and ROI is as follows:

$$\text{ROI} = \frac{\text{EVA}}{\text{I}} + \text{K}$$

Where ROI = return on investment

EVA = Economic Value Added

I = Investment

K= Cost of capital

The two methods, however, may show different results. In face of such a conflict, a question may arise, which of two must be considered more reliable?

### **Possible Investment Bases**

The base that is used for measuring invested capital may appropriately differ between companies and within segments of the same company.

The alternative bases that may be used include:

## Notes

- (a) ***Total assets available:*** This base includes assets, regardless of their individual purpose.
  - (b) ***Total assets employed:*** This base excludes excess or idle assets, such as vacant land or construction in progress.
  - (c) ***Net working capital plus other assets:*** This is same as (a) except that current liabilities are deducted from the total assets available. In a sense, this represents an exclusion of that portion of current assets which is supplied by short-term creditors. The main justification is that the manager often has control on the short-term credit. An able manager should optimize use of such credit within some overall constraints.
  - (d) ***Shareholders equity:*** This base centers attention on the rate of return that will be earned by the business owners.

Base (d) is important to the owners but is not so significant to the operating manager. He is usually concerned with the utilization of assets, not with the long-term sources of assets. Business has two major management functions - operating and financing and measurement of operating performance (how available assets are employed) should not be influenced by financing decisions (what sources of assets were selected).



**Example:** It would be not proper to use shareholders' equity as the basis for comparing the operating performance of two managers of similar companies, if one company is debt free and the other debt-ridden.

Bases (a), (b) and (c) are always superior to shareholders equity for measuring the performance of division managers. If the division manager's mission is to utilize all assets, at least he can without regard to their financing, consider (a) as the best. If top management directive force him to carry extra assets which are not currently productive, then (b) is the best. If the manager has direct control over the amount of the division's short-term trade credit and bank loans, then (c) is the best. In practice, (a) is used most often, although (c) is not far behind. The figure used for total available assets should be the average amount during the period under review i.e., by summing the beginning and ending balances and dividing by two; in other instances, a moving or weighted average may be needed to achieve accuracy.

## **Self Assessment**

## Multiple Choice Questions:

Notes

## **4.9 Measuring and Controlling of Assets Employed**

In deciding on the investment base to be used for evaluating managers of investment centers, two pertinent questions are:

1. What practice will induce business managers to use their assets most efficiently and to acquire the proper amount and kind of new assets so as to improve their performance in terms of profits on capital employed?
2. What practices best measure the performance of the entity as an economic entity?

**Cash:** Most companies control cash centrally, because central control permits the use of a smaller cash balance than would be the case if each business unit held cash balances sufficient to provide the necessary buffer for the unevenness of cash inflows and cash outflows. Business unit cash balances may be only "float" between daily receipts and daily disbursements. Consequently, the actual cash balance at the business unit level tends to be much smaller than would be required, if the business unit was an independent company. Many companies, therefore, calculate the cash to be included in the investment base by means of a formula e.g. percent of annual sales, percent of cost of sales minus depreciation, reason being to facilitate comparison with other units or with outside companies.

Some companies exclude cash from the investment base on the theory that investment base consists of working capital plus fixed assets, and cash approximates current liabilities; and if this is so, the sum of accounts receivable and inventories will approximate the working capital.

**Receivables:** Business unit managers are able to influence the level of receivables, indirectly by increasing sales and directly by establishing credit terms (by approving individual credit accounts and credit limits) and by their initiative in collecting overdue amounts. Receivables at end of period or average of intra-period balance are a better measure that should be related to profits. Questions are raised whether accounts receivable should be included at selling prices or at the cost of goods sold. The argument in favour of the cost of goods sold method is that business units real investment in accounts receivable is only the cost of goods sold. On the other hand, it can be argued that the business unit has the opportunity to reinvest the money collected from accounts receivable; hence, accounts receivable should be included at selling prices. The usual practice is to include receivables at selling prices, i.e., the book amount.

If the business unit does not control credits and collections, receivables may be calculated on a formula basis e.g. consistent with normal payment period say 60 days' sales, etc.

**Inventories:** Inventories are included at the end of period amounts or intra-period average balances. If the company uses LIFO (Last In, First Out) for financial accounting purposes, a different valuation method is used for business unit performance reporting because, in periods of inflation, LIFO inventory balances tend to be very low. In such a situation, inventories should be valued at standard or average costs for the purpose of the evaluation of the performance of business unit.

Work in progress inventory is financed by advance payments or by progress payments from customers, especially with long manufacturing period. These payments are deducted from the gross inventory or reported as liabilities.

If the business unit can influence the payment period allowed by creditors, the accounts payable are included in the liabilities or accounts payable are deducted from inventory.

**Working capital in general:** There is considerable variation in how working capital items are treated. At one extreme, companies include all current assets in the investment base, with no offset for any current liabilities, especially, if the business units have no influence over accounts payable or other current liabilities. It overstates, the amount of corporate capital required to finance the business unit. At the other extreme, all current liabilities may be deducted from Current Assets to calculate the investment base. This provides a good measure of the capital provided by the corporation on which it expects the business unit to earn a return.

**Notes**

**Property Plant and Equipment:** In the financial accounting, fixed assets are recorded at acquisition cost, and the cost is written off over the assets' useful life by depreciation mechanism. Most companies use the same asset base in measuring profitability of the business units. The following points need to be considered:

1. **Purchase of new machinery:** This can be explained by way of numericals. Suppose the balance sheet and income statement of a business unit read as follows:

Business Unit Balance Sheet			(₹ 000)	
<b>Corporate equity</b>		600	<b>Fixed Assets</b>	
Current liabilities-			Cost	700
Accounts payable	100		Depreciation	350
Other current liabilities	100	200		350
			Current Assets	
			Cash	60
			Receivables	170
			Inventory	220
		800		450
				800

Business Unit Balance Sheet			(₹ 000)	
<b>Revenue</b>			<b>1200</b>	
Expenses less depreciation		1000		
Depreciation (based on straight line method)		50	1050	
Income before taxes			150	
Capital charge $600 \times 10\%$ (Assumed 10% as normal return)			60	
EVA			90	

Suppose the business unit has an opportunity to acquire a new machine at a cost of ₹ 120,000, which is estimated to produce cash savings of ₹ 33000 a year for 5 years. If the company has a required return of 10%, such an investment is attractive based on capital budgeting technique as follows:

			(₹ 000)
<b>Investment in machine - life 5 years</b>			<b>120</b>
Cash inflow ₹ 33,000 per year			
Present value of cash inflow $33,000 \times \text{Cum PV at } 10\% \text{ for } 5 \text{ years i.e., } 33,000 \times 3.791$			125
Net present value			5

If the machine is purchased, the reported ROI and EVA of the unit in the 1st year will decrease, rather than increase. The income statement without the machine and the income statement if the machine is acquired are shown below:

Notes		Without the machine		First year with machine
Revenue		1200		1200
Expenses less depreciation	1000		1000 - 33 = 967	
Depreciation	50	1050	50 + 24 = 74	1041
Income before taxes				
Capital charge	10% on 600	150 60	10% on 600 + 120	159 72
EVA		90		87
ROI	150	25%	159	22.1%
	600		720	

Under these circumstances, the business unit manager may be reluctant to purchase this machine. Even in later years, the amount of residual income will increase, as the book value of the machine declines, though in reality there is no real change in profitability in subsequent years after the machine was acquired. If profitability is measured by return on investment, as the year progresses, ROI increases from 1st year of 7.5% to 37.5% in the fifth year, although we know from the present value calculation, the true return is about 11%. The calculations are shown below:

Year	Book value at beginning of year (1)	Income (2) [33-24 Saving Depr.]	Capital charge (3) = 10% on (1)	EVA (2) - (3)	ROI 2 - 1
1	120	9	12	-3	7.5%
2	96	9	9.6	-0.6	9.5
3	72	9	7.2	1.8	12.5
4	48	9	4.8	4.2	18.75
5	24	9	2.4	6.6	37.50

It is evident that, if depreciable assets are included in the investment base at net book value, business unit profitability is misstated, with the result, business unit manager may not be motivated to make correct purchase decisions.

The fluctuation in EVA and return on investment from year to year as shown above can be avoided by including depreciable assets in the investment base at gross book value, rather than net book value. In such a case, the investment each year would be shown at the original cost of ₹ 120,000, additional income will be ₹ 9000 (cash saving 33,000 minus depreciation of ₹ 24000). EVA each year will be negative ₹ 3000 (₹ 9000 minus capital charge ₹ 12000) and the ROI would be 7.5% (9000, 120,000). Both these numbers indicate that business units profitability has decreased which, in fact, is not the case.

2. **Replacement of machinery:** If a new machine is being considered as a replacement of existing machinery that has some undepreciated book value, the undepreciated book value is irrelevant in the economic analysis of the proposed purchase (except indirectly as it may affect income taxes). Whereas, for calculation of asset base (for the profitability calculation of business unit), net book value will only increase by the difference between the net book value after year 1 of the new machine and the net book value of the old machine. The result is, the relevant amount of additional investment is understated and residual income is correspondingly overstated. Managers will, therefore, be motivated to replace old equipment with new machinery even in situation when such replacement is economically not viable.

3. ***Disposition of assets:*** If the assets are included in the investment base at the original cost, the business unit managers are motivated to dispose them, even if they have some usefulness because the investment base of the business unit is reduced by the full cost of the assets disposed off.
4. ***Leased assets:*** Suppose the business unit whose financial statement as shown in (1) above sells its fixed assets of book value of ₹ 350,000, returns the proceeds of the sale to corporate office and then lease back the assets at a rental of ₹ 70,000 per year, the impact on ROI and RI will be as follows:

(₹ 000)

		As in (1) above	If Assets are Leased	
Revenue		1200		1200
Expenses other than depreciation and rental	1000		1000	
Depreciation	50		-	
Rental	-		70	
		1050		1070
Income before tax		150		130
Capital charge 10% on 600		60	10% on 250	25
EVA		90		105
ROI	150	= 25%	130	= 52%
	600			250

From the above table, it is clear that business units income before taxes would be reduced because the rental charges are higher than depreciation charges that has been eliminated. But EVA will increase because the higher cost would be more than offset by the decrease in the capital charge. ROI also increases from 25% to 52% because of reduction in the asset base. Hence, business unit managers are inclined to lease assets rather than own them.

5. ***Idle Assets:*** If the business unit has idle assets that can be used by other units, it may be permitted to exclude them from the investment base if it classifies them as available.

This will encourage business unit managers to release underutilized assets to units that may have better use for them.

6. ***Other valuation methods:*** Some companies depart entirely from the accounting records and use an approximation of the current value of the asset. They arrive at this amount by periodical appraisal of assets (say, every five years or when a new business unit manager takes over) or by adjusting original cost by an index of changes in equipment prices, or by using insurance values. One point to be noted that although published indexes of replacement costs of plant and equipment can be used, more price indexes are not entirely relevant, because they do not consider impact of changes in technology.

These are following problems in using non-accounting values:

- (a) They tend to be subjective, as contrasted with accounting values which appear to be objective and generally, not subject to argument. Business unit managers will regard the system of using non-accounting values as playing a game of numbers.
- (b) Business unit profitability will be inconsistent with the corporate profitability as reported to the shareholders. As a practical matter, some managers regard net income

**Notes**

as reported on the financial statements, as constituting the “name of the game”. Consequently, they do not favour an internal system that uses a different method of “keeping score”, regardless of its theoretical merits.

7. ***Long-term debts:*** Ordinarily, a business unit receives its long-term/permanent capital from the corporate pool of funds. The corporates obtain these funds from long-term debts, from equity investors and from retained earnings. To the business unit, the total amount of these funds is relevant, but the sources from which they are obtained are irrelevant. In unusual situations, however, a business units financing may be peculiar to its own situation.
8. ***The capital charge:*** The rate used to calculate capital charge is set by corporate office. It should be higher than the corporate rate for debt financing because funds involved are a mixture of debt and higher cost of equity. Usually, the rate is set somewhat below the company’s estimated cost of capital so that residual income of an average business unit may be above zero.

In theory, we can use different rates for business units with different risk characteristics, though in practice, this is rarely done. Some companies use a lower rate for working capital than for fixed assets. This is based on the judgement that working capital is less risky than fixed assets since the funds are committed for a shorter time period. In other cases, the lower rate is used since company is including inventory and receivable in the investment base at the gross amount without a deduction for accounts payable (which has zero interest).

## **Self Assessment**

## Multiple Choice Questions:



## 4.10 Multiple Performance Measures

ROI and EVA have been employed with some success by many large sized undertakings which have resorted to divisionalisation. However, exclusive reliance on a single profitability measure may lead to manipulation of the system and consequent distortion in decision making. Managers of business units may delay a potentially profitable investment in a bid to enhance short-term return on income at the cost of long run consequences.

In order to overcome the limitation of “sole dependence in a single measure”, many firms have developed multiple goal structures.

**Notes**

*Example:* Following are the multiple goal structure of General Electric Company:  
 (i) Profitability, (ii) Market position, (iii) Productivity, (iv) Product leadership, (v) Personnel development, (vi) Employee attitudes, (vii) Public responsibility, (viii) Balance between long-range and short-range goals.

The above multiple goal structures reveal the following:

1. Some of the goals are amenable to reasonably objective quantitative measurement while others are not.



*Example:* Profitability and productivity can be reasonably measured, whereas, employee attitude and public responsibility are not easily quantifiable.

2. There is some internal inconsistency among the goals e.g. efforts to raise productivity may dampen employee morale. Efforts to fulfil somewhat internally inconsistent and inadequately articulated goals can be frustrating and confusing. The optimum balance may be hard to establish.

**Problem 1:** A large automobile company follows a pricing policy whereby “normal” or “standard” activity is used as a base for pricing. That is, prices are set on the basis of long-run annual volume predictions. They are then rarely changed, except for notable changes in wage rates or material prices. You are given the following data:

Material, wages and other variable costs	₹ 1320 per unit
Fixed overhead	₹ 300,000,000 per year
Desired rate of return on invested capital	20%
Normal volume	10,00,000 units
Invested capital	₹ 900,000,000

Required:

1. What net income percentage based on rupee sales is needed to attain the desired rate of return?
2. What rate of return on invested capital will be earned on sales volumes of 1500,000 and 500,000 units respectively?

**Solution:**

1. Net income 20% of 900,000,000	₹ 180,000,000
Fixed overhead	₹ 300,000,000
Total contribution = net income + fixed overhead	₹ 480,000,000
Contribution per unit = ₹ 480,000,000 - 1,000,000 = ₹ 480	
Materials wages and other variable are	₹ 1320/unit
Sales	1800 per unit

$$\text{Hence, total sales} = 1800 \times 1,000,000 = 1800,000,000 = \frac{\text{₹ } 180,000,000}{180,000,000} \times 100 = 10\%$$

Therefore, net income as percentage of rupees sales

2. Sales volume	1500,000 units	500,000 units
Contribution on sales volume	₹ 720,000,000	₹ 240,000,000
Fixed overhead	₹ 300,000,000	₹ 300,000,000
Net income	₹ 420,000,000	₹ - 60,000,000
Return on invested capital	46.67%	(-) 0.07%

**Notes**

**Problem 2:** The JKL Company used the residual income method for measuring divisional profit performance. The company charges each division a 5% return on its average current assets and a 10% return on its average fixed assets. Listed below are some financial statistics for three divisions of the JKL Company:

Budget data ('000)	Division		
	J	K	L
2004 budgeted profit	90	55	50
2004 budgeted current assets	100	200	300
2004 budgeted fixed assets	400	400	500
Actual data ('000)			
2004 Profits	80	60	50
2004 current assets	90	190	350
2004 Fixed assets	400	450	550

Required:

1. Calculate the ROI objective and actual ROI for each division for 2004.
2. Calculate the EVA objective for each division for 2004.
3. Calculate the actual EVA for each division for 2004 and calculate the extent that it is above or below objective.
4. Listed below are four management actions, together with the financial impact. For each of these situations, calculate the impact on the budgeted ROI and EVA for each division.

**Situation 1:** An investment in fixed assets is made. This action increases the average fixed assets by ₹ 1,00,000 and profits by ₹ 10,000.

**Situation 2:** An investment in Fixed Assets is made. This action increases the average fixed assets by ₹ 1,00,000 and profits by ₹ 7000.

**Situation 3:** A programme to reduce inventories is instituted as a result inventories are reduced by ₹ 50,000. Increased costs and reduced sales resulting from the lower inventory levels reduce profits by ₹ 5000.

**Situation 4:** A plant is closed down and sold. Fixed assets are reduced by ₹ 75,000 and profits (from reduced sales) are decreased by ₹ 7500.

**Solution:**

Budget 2004	J	K	L
Profit	90	55	50
Current assets	100	200	300
Fixed assets	400	400	500
Total assets	500	600	800
ROI = $\frac{\text{Profit}}{\text{Total Assets}} \times 100$	18%	9.17%	6.25%
Charges - 5% of current assets	5	10	15
Charges - 10% of fixed assets	40	40	50
Total charges	45	50	65
EVA = Profit minus charges	45	5	-15

Actual 2004 (₹ '000)	J	K	L	Notes
Profit	80	60	50	
Current assets	90	190	350	
Fixed assets	400	450	550	
Total assets	490	640	900	
ROI = $\frac{\text{Profit}}{\text{Total Assets}} \times 100$	16.3	9.4	5.6	
Charges - 5% of current assets	4.5	9.5	17.5	
Charges - 10% of fixed assets	40	45	55	
Total charges	44.5	54.5	72.5	
EVA = Profit minus charges	35.5	5.5	-22.5	
Variation from objective (budget)	- 9.5	+ 0.5	- 7.5	

*Impact of different situations*

**Situation 1:** Fixed Assets increases by ₹ 1, 00,000 and profit increases by ₹ 10,000, charges also increase by ₹ 10,000.

	J	K	L
Revised ROI	$\frac{90 + 10}{500 + 100} = 16.7\%$	$\frac{55 + 10}{600 + 100} = 9.3\%$	$\frac{55 + 10}{800 + 100} = 6.7\%$
Impact on budget	Reduces	Increases	Increases
EVA	$45 + 10 - 10 = 45$	$5 + 10 - 10 = 5$	$- 15 + 10 - 10 = - 15$
Impact on budget	No change	No change	No change

**Situation 2:** Fixed Assets increases by ₹ 1, 00, 000 and Profit increases by ₹ 7000, charges also increase by ₹ 10,000

	J	K	L
Revised ROI	$\frac{90 + 7}{500 + 100} = 16.2\%$	$\frac{55 + 7}{600 + 100} = 8.9\%$	$\frac{50 + 7}{800 + 100} = 6.3\%$
Impact on budget	Reduces	Reduces	Increases
Revised EVA	$45 + 7 - 10 = 42$	$5 + 7 - 10 = 2$	$- 15 + 7 - 10 = - 18$
Impact on budget	Reduces	Reduces	Reduces

**Situation 3:** Reduces Current Assets by ₹ 50,000, reduces profit by ₹ 5000, Reduces charges by (5% on 50,000) ₹ 2500

	J	K	L
Revised ROI	$\frac{90(-)5}{500(-)50} = 18.9\%$	$\frac{55 - 5}{600 - 50} = 9.1\%$	$\frac{50 - 5}{800 - 50} = 6.0\%$
Impact on budget	<u>Increases</u>	<u>Reduces</u>	<u>Reduces</u>
Revised EVA	$45 - 5 + 2.5 = 42.5$	$5 - 5 + 2.5 = 2.5$	$- 15 - 5 + 2.5 = - 17.5$
Impact on budget	Reduces	Reduces	Reduces

**Situation 4:** Fixed Assets reduced by ₹ 75,000, profits are reduced by ₹ 7500 and consequently reduction of charges (10% on ₹ 75, 00) by ₹ 7500

Notes	J	K	L
Revised ROI	$\frac{90(-)7.5}{600(-)75} = 18.9\%$	$\frac{55 - 7.5}{600 - 75} = 9.0\%$	$\frac{50 - 7.5}{800 - 75} = 5.9\%$
Impact on budget	Increases	Reduces	Reduces
Revised EVA	$45 - 7.5 + 7.5 = 45$	$5 - 7.5 + 7.5 = 5$	$-15 - 5 + 2.5 = -15$
Impact on budget	No change	No change	No change

**Problem 3:** Following is the year-end trial balance of Hofna Company. The company closes its books on December 31. There were no stock transactions during the year;

	Debit	Credit
Current Assets	2,00,000	
Fixed Assets	9,00,000	
Accumulated depreciation		3,50,000
Land held for investment	3,00,000	
Current Liabilities		50,000
Long-term liabilities		2,10,000
Capital stock		2,40,000
Retained earnings		4,00,000
Dividends	50,000	
Sales		7,50,000
Cost of goods sold	3,40,000	
Operating expenses	2,10,000	
Totals	20,00,000	20,00,000

**Required:** Compute return on investment using:

1. Gross Assets
2. Net Assets
3. Gross Assets employed
4. Net Assets employed
5. Beginning owners equity
6. Ending owners equity

**Solution:**

1.

Income Statement		₹
Sales		7,50,000
<i>Less: cost of goods sold</i>	3,40,000	
Operating expenses	2,10,000	5,50,000
Operating profit		2,00,000
Gross Assets:		
Current Assets	2,00,000	
Fixed Assets	9,00,000	
Land held for investment	3,00,000	14,00,000

$$\text{ROI on Gross Assets} = \frac{20,000}{1400000} = 14.3\%$$

		Notes
2.	Net Assets	= Gross Assets - Accumulated depreciation = $14,00,000 - 3,50,000 = ₹ 10,50,000$
	ROI using net assets	= $\frac{200000}{1050000} = 19.0\%$
3.	Gross assets employed	= Gross assets - assets held for investment = $14,00,000 - 3,00,000 = ₹ 11,00,000$
	ROI using gross assets employed	= $\frac{200000}{1100000} \times 10\% = 18.2\%$
4.	Net assets employed	= Gross assets employed - Accumulated depr. = $11,00,000 - 3,50,000 = ₹ 7,50,000$
	ROI using net assets employed	= $\frac{200000}{750000} \times 10\% = 18.2\%$
5.	Beginning owners equity	= Capital stock + Retained earnings (op) = $240,000 + 4,00,000 = 6,40,000$
	ROI using beginning owners equity	= $\frac{200000}{640000} \times 100 = 31.2\%$
	Equity employed	
6.	Ending owners equity	= Beginning owners equity + operating profit - Dividend = $6,40,000 + 2,00,000 - 50,000$ = $7,90,000$
	ROI using ending owners equity	= $\frac{200000}{790000} \times 100 = 25.3\%$

**Problem 4:** Hoppleworth products began operations 8 years ago in Eastern India. Business grew rapidly and soon product demand outstripped production facilities. The company opened a new plant of identical size and capacity in the Western India 2 years ago. Each plant serves its geographical area and is operated as a separate division. Below are operating data for the most recent year:

	Eastern Division	Western Division
Sales	10,00,000	10,00,000
Manufacturing expenses	5,00,000	6,00,000
Marketing expenses	1,00,000	1,00,000
Administrative expenses	2,00,000	2,00,000
Current assets	2,00,000	2,00,000
Fixed assets (Gross)	10,00,000	20,00,000
Accumulated depreciation	8,00,000	4,00,000

Since the Eastern Division plant was built, construction costs have doubled. The entire difference in manufacturing expenses is due to higher depreciation costs of the Western India plant.

Required:

1. Compute return on investment for each division based on total net assets.
2. Compute return on investment for each division based on total gross assets.
3. What is your evaluation of the two divisions?

**Notes**

**Solution:**

1. Operating profit

(Rupees)

	Eastern Division	Western Division
Sales	10,00,000	10,00,000
Less: Manufacturing expenses	5,00,000	6,00,000
Marketing expenses	1,00,000	1,00,000
Administrative expenses	2,00,000	2,00,000
	8,00,000	9,00,000
Operating profit	2,00,000	1,00,000
<b>Total Net Assets:</b>		
Current Assets	2,00,000	2,00,000
Fixed assets 10,00,000		20,00,000
Less: Acc Depr. 8,00,000	2,00,000	4,00,000
		16,00,000
	4,00,000	18,00,000
Return on investment based on total assets	$\frac{200000}{400000} \times 100 = 50\%$	$\frac{100000}{1800000} \times 100 = 5.6$

2. Total gross assets = Total net assets + Accumulated depreciation

Hence ROI based on total gross assets:

$$\text{Eastern division} = \frac{200000}{400000+800000} \times 100 = 16.7\%$$

$$\text{Western division} = \frac{10000}{1800000 + 400000} \times 100 = 4.5\%$$

3. Since the western division plant was set up later, fixed assets base is double than the eastern division plant and higher depreciation of high cost plant i.e., the western division's reduced operating profit. The above have resulted lower ROI for the western division. This is one of the disadvantages of ROI basis of performance measurement of divisions. This can be corrected by valuing assets on replacement cost basis.

**Problem 5:** Osaka Corporation is a decentralized manufacturing company with three producing divisions. Following is a schedule of sales and cost data for the accounting year just completed:

	Division A	Division B	Division C
Sales	2,25,000	90,000	6,00,000
Cost of goods sold	1,05,000	37,500	3,60,000
Operating expenses	90,000	30,000	1,50,000
Current assets	75,000	30,000	1,20,000
Land held for investment	-	1,20,000	-
Fixed assets (gross)	1,80,000	1,50,000	7,50,000
Accumulated depreciation	90,000	15,000	5,25,000
Current liabilities	15,000	22,500	60,000
Long-term liabilities	22,500	-	37,500

Required:

Compute the following: (a) Net income for each division (b) ROI using gross assets, (c) ROI using net assets, (d) ROI using gross assets employed, (e) Residual income using a target income of 15% of net assets, (f) Income as a percentage of sales, (g) Prepare a chart ranking the divisions for each of the performance measures.

*Solution:*

Notes

(Rupees)

	Division A	Division B	Division C
<b>(a) Net income:</b>			
Sales	2,25,000	90,000	6,00,000
Less: cost of goods sold	1,05,000	37,500	3,60,000
Operating expenses	90,000	30,000	1,50,000
	1,95,000	67,500	5,10,000
Net income	30,000	22,500	90,000
Rank	2	3	1
<b>(b) Gross Assets:</b>			
Current assets	75,000	30,000	1,20,000
Land held for investment	-	1,20,000	-
Fixed assets (gross)	1,80,000	1,50,000	7,50,000
<b>Gross assets</b>	2,55,000	3,00,000	8,70,000
ROI using gross assets = $\frac{\text{Net income}}{\text{Gross assets}} \times 100$	11.8%	7.5%	10.3%
Rank	1	3	2
<b>(c) Net Assets:</b>			
Gross Assets as per (b)	2,55,000	3,00,000	8,70,000
Less: Accumulated depreciation	90,000	15,000	5,25,000
<b>Net assets</b>	1,65,000	2,85,000	3,45,000
ROI using net assets = $\frac{\text{Net income}}{\text{Gross assets}} \times 100$	18.2%	7.9%	26.1%
Rank	2	3	1
<b>(d) Gross Assets employed:</b>			
Gross assets as per (b)	2,55,000	3,00,000	8,70,000
Less: Land held for investment	-	1,20,000	-
<b>Gross assets employed</b>	2,55,000	1,80,000	8,70,000
ROI using gross assets employed	11.8%	12.5%	10.3%
= $\frac{\text{Net income}}{\text{Gross assets emp}} \times 100$			
Rank	2	1	3
<b>(e) Net income as per (a) above:</b>			
30,000	22,500	90,000	
Less: 15% of Net assets as per (c) above	24,750	42,750	51,750
Residual income	5,250	(-20,250)	38,250
Rank	2	3	1
<b>(f) Net income as per (a) above:</b>			
30,000	22,500	90,000	
Sales as per (a)	2,25,000	90,000	6,00,000
Income as a percentage on sales	13.3%	25.0%	15%
Rank	3	1	2
<b>(g) Comparative rank as per (a):</b>			
Comparative rank as per (b)	2	3	1
Comparative rank as per (c)	1	3	2
Comparative rank as per (d)	2	3	1
Comparative rank as per (e)	2	3	1
Comparative rank as per (f)	3	1	2
<b>Total points</b>	12	14	10

**Notes**

**Problem 6:** Division A of Better Margins Ltd. has been given a budgeted target of selling 2,00,000 components CoM 21, it manufactures at a price which would fetch a return of 25% on the average assets employed by it. The following figures are relevant:

Fixed overhead	₹ 4,00,000
Variable cost	₹ 1 per unit
Average Assets:	
Sales debtors	₹ 2,00,000
Stocks	₹ 6,00,000
Plant and other assets	₹ 4,00,000

However, the marketing department of the company finds out by a survey that the maximum number of CoM 21, the market can take at the proposed price is only 1,40,000 units.

Fortunately, division B is willing to purchase the balance 60,000 units. The manager of division A is willing to sell to division B at a confessional price of ₹ 4 per unit. But the manager of division B is ready to pay ₹ 2.25 per unit, as he feels he can himself make CoM 21 in his division at that price.

Rather than selling to division B at ₹ 2.25 per unit, the manager of division A feels that he will restrict the activity of his division to the manufacture and sale of 1,40,000 components only. By this, he can reduce ₹ 80,000 in stocks, ₹ 1,20,000 of plant and other assets and ₹ 40,000 in selling and administration expenses.

As a management accountant, do you agree with the proposition of the manager of division A to restrict the activities to 1,40,000 components, from the overall interest of the organisation. Give detailed workings.

**Solution:** Division A accepts a return of 25% on the average assets employed by it. Average assets employed = ₹ 2,00,000 + 6,00,000 + 4,00,000 = ₹ 12,00,000. Hence profit is 25% on ₹ 12,00,000 i.e., ₹ 3,00,000. Total sales will be

1. Profit 25% on 12,00,000	3,00,000
2. Fixed overhead	4,00,000
3. Variable overhead 2,00,000 × ₹ 1	2,00,000
Total sales for 2,00,000 units	9,00,000

Hence sales per unit ₹ 9,00,000 / 2,00,000 units = ₹ 4.50

	Transfer to Division B and sales to outside parties	Sales to outside parties only
No. of units	2,00,000	1,40,000
Sales value 1,40,000 × 4.50 60,000 × 2.25	6,30,000 1,35,000	6,30,000
<i>Less:</i> variable cost @ ₹ 1 per unit	7,65,000 2,00,000	6,30,000 1,40,000
Contribution	5,65,000	4,90,000
<i>Less:</i> Fixed overhead	4,00,000	3,60,000 (Reduction of ₹ 40,000)
Net profit	1,65,000	1,30,000
Average assets employed	12,00,000	10,00,000
Return on investment	13.75%	13.0%

If sales are restricted to outside sales only, there is reduction in net profit of ₹ 35,000 (₹ 1,65,000 - ₹ 1,30,000) and reduction of ROI from 13.75% to 13.0%, hence, the proposition of the manager of division A is not correct from company's overall point of view.

**Notes**

**Problem 7:** The ABC company has three divisions - A, B and C. Division A is exclusively a marketing division. Division B is exclusively a manufacturing division and Division C is both a manufacturing and marketing division. The following are the financial facts of each of these divisions:

	Division A	Division B	Division C
Current assets	₹ 1,00,000	₹ 1,00,000	₹ 1,00,000
Fixed assets	-	10,00,000	5,00,000
Total assets	1,00,000	11,00,000	6,00,000
Profits before dep. & mktg. Dev. Costs	2,00,000	2,00,000	2,00,000

Required: Assume that the ABC company depreciates fixed assets on a straight line basis over 10 years. To maintain its markets and productive facilities, it has to invest ₹ 1,00,000 per year in market development in division A and ₹ 50,000 per year in division C. This is written off as an expense. It has to replace 10% of its productive facilities each year. Under these equilibrium conditions, what are the annual rates of return earned by each of the division?

**Solution:**

	Divisions			<b>Total</b>
	<b>A</b>	<b>B</b>	<b>C</b>	
Profit before dep. & mktg. Dev. Costs	2,00,000	2,00,000	2,00,000	6,00,000
Less: Depreciation	-	1,00,000	50,000	1,50,000
Less: Market development costs	1,00,000	-	50,000	1,50,000
Net profit	1,00,000	1,00,000	1,00,000	3,00,000
Total assets	1,00,000	11,00,000	6,00,000	18,00,000
ROI = <u>Net profit</u> x 100 Total assets	100%	9.1%	16.7%	16.7%

Note: Since depreciation on fixed assets is 10% and company is replacing 10% of its productive facilities every year, fixed assets figure will remain the same from year to year.

**Problem 8:** The G division of the GHI Corporation proposes the following investment in a new product line:

Investment in fixed assets ₹ 1,00,000

Annual profits before depreciation but after taxes ₹ 25,000 (i.e., annual cash flow)

Life 5 years

The GHI Corporation used the time adjusted rate of return, with a cut-off rate of 8% in evaluating its capital investment proposals. A ₹ 25,000 cash inflow for five years on an investment of ₹ 1,00,000 has a time adjusted return of 8%. Consequently, the proposed investment is acceptable under the company's criterion. Assume that the project is approved and that the investment and profit were the same as estimated. Assets are included in the divisional investment base at the average of the beginning of the years net book value.

Required: Calculate the rate of return that is earned by the G division on the new investment for each year and the average rate for the five years, using straight line depreciation.

**Notes**

**Solution:**

Annual cash inflow	₹ 25,000
Less depreciation 1,00,000 @ 5	₹ 20,000
Annual income	₹ 5,000

Year	Bk. Value at the beginning of the year	Annual income	Capital charge @ 8%	Residual income (Annual income - capital charge)	ROI Annual income / bk. Value of assets (OP)
1	100	5	8	-3	5%
2	80	5	6.4	-1.4	6.25%
3	60	5	4.8	0.2	8.3%
4	40	5	3.2	1.8	12.5%
5	20	5	1.6	3.4	25.0

Average rate of return for 5 years =  $(5 + 6.25 + 8.3 + 12.5 + 25) / 5 = 11.41\%$

**Capital Budgeting as a tool to Management Performance Measurement:** The techniques used in capital budgeting for evaluating a project can be used as Management Performance Measure for the company as a whole (the company is organized functionally and at CEO's level, it can be evaluated) and in respect of business units (where the company is structured as independent business units) where assets employed can be identified. The measure of performance is based on the relationship between the (i) estimation of cash flow (ii) timing of cash flows and (iii) the assets employed.

There are two ways to relate cash flows to assets employed:

1. Net Present Value (NPV) where cost of capital (or desirable rate of return) has to be identified.
2. Internal Rate of Return (IRR) which can be compared with the cost of capital or desirable rate of return.

The following steps are necessary:

1. Earnings are the basis for estimating cash flows.

Year wise cash inflow = Year wise accounting profit of the company or business units after tax + Depreciation + all other non-cash expenses - Non cash revenue

2. Further cash flows are to be estimated for the next 3 to 5 years based on long-term strategic plans.
3. Determine free cash flow - Free cash flow is the cash flow available to all investors in the company - both shareholders and bond holders after considering taxes, capital expenditure and working capital investment.
4. At the end of 3 or 5 years, the terminal value (just like the project or the asset) of the business unit (or the company) is to be estimated.

There are four approaches for calculating terminal value:

**Approach 1:** Terminal value is a growing perpetuity

$$\text{For Terminal value} = \frac{\text{Free cash flow} (1 + \text{growth rate})}{\text{Cost of capital rate} - \text{growth rate}}$$

**Approach 2:** Terminal value is a stable perpetuity

Notes

$$\text{Terminal value} = \frac{\text{Free cash flow}}{\text{Discount rate (Cost of capital)}}$$

**Approach 3:** Terminal value as a Multiple of Book value. The terminal value can be estimated by multiplying the forecasted book value of capital by an approximate market - to book ratio. Normally, the current market/book value ratio is taken as proxy for future.

**Approach 4:** Terminal value as a Multiple of earnings – the terminal value under this method is established by multiplying the forecasted terminal year profits by an approximate price minus the earning multiple. As usual, the current price/earnings multiple can be used as proxy for future.

5. What is the total asset employed as on date?

**Illustration:** The cash flows of a division of a company are given below:

(₹ Crores)

	Year 1	Year 2	Year 3	Year 4	Year 5
Net operating profit after tax (1)	65	70.20	75.40	80.6	87.10
Depreciation expenses (2)	20	22	24	26	28
Capital expenditure (3)	30	32	35	37	40
Working capital (4)	20	22	23	25	27
Free cash flow (5) = (1) + (2) - (3) - (4)	35	38.20	41.40	44.60	48.10

Cash flows are expected to grow at 5% after 5th year.

Cost of capital is 15% and assets employed ₹ 325 crores.

Evaluate the performance of Division A.

**Solution:**

	Year 1	Year 2	Year 3	Year 4	Year 5
Free cash flow terminal value	35	38.20	41.40	44.60	48.10 *505.05
Discount factor @ 15%	0.870	0.756	0.658	0.572	0.497
Discounted cash flow	30.45	28.88	27.24	25.51	274.91

Total of Discounted Cash Inflow 386.99

Less: Capital employed 325.00

NPV 61.99

IRR of the Division (approx) 20%

(i.e., the discount factor or the cost of interest the unit can bear)

**Note:** \*Terminal value =  $\frac{48.10 \times 1.05}{0.15 - 0.05} = \frac{50.505}{0.10} = ₹ 505.05$  crores

## Notes

Table 4.1: Key Financial Ratios, how they are calculated and what they show

Ratio	How Calculated	What It shows
<b>Profitability ratios</b>		
1. Gross profit margin	$\frac{\text{Sales} - \text{cost of goods sold}}{\text{Sales}}$	An indication of the total margin available to cover operating expenses and yield a profit.
2. Operating profit margin (or return on sales)	$\frac{\text{Profits before taxes and before interest}}{\text{Sales}}$	An indication of the firm's profitability from current operations without regard to the interest charges accruing from the capital structure.
3. Net profit margin (or net return on sales)	$\frac{\text{Profits after taxes}}{\text{Sales}}$	Shows after tax profits per rupee of sales. Subpart profit margins indicate that the firm's sales prices are relatively low or that costs are relatively high, or both.
4. Return on total assets	$\frac{\text{Profits after taxes}}{\text{Total assets}}$ Or $\frac{\text{Profits after taxes + interest}}{\text{Total assets}}$	A measure of the return on total investment in the enterprise. It is, sometimes desirable to add interest to the after tax profits to form the numerator of the ratio since total assets are financed by creditors as well as by stockholders; hence it is accurate to measure the productivity of assets by the returns provided to both classes of investors.
5. Return on stockholders' equity (or return on net worth)	$\frac{\text{Profits after taxes}}{\text{Total stockholders' equity}}$	A measure of the rate of return on stockholders' investment in the enterprise.
6. Return on capital employed	$\frac{\text{Profits after taxes} - \text{Preferred stock dividends}}{\text{Total stockholders' equity} + \text{total debt} - \text{Par value of preferred stock}}$	A measure of the rate of return on the total capital investment in the enterprise.
7. Earnings per share	$\frac{\text{Profits after taxes and after preferred stock dividends}}{\text{Number of shares of common stock outstanding}}$	Shows the earnings available to the owners of each share of common stock.
<b>Liquidity ratios</b>		
1. Current ratio	$\frac{\text{Current assets}}{\text{Current liabilities}}$	Indicates the extent to which the claims of short-term creditors are covered by assets that are expected to be converted to cash in a period roughly corresponding to the maturity of the liabilities.
2. Quick ratio (or acid test ratio)	$\frac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$	A measure of the firm's ability to pay off short-term obligations without relying on the sale of its inventories.
3. Inventory to net working capital	$\frac{\text{Inventory}}{\text{Current assets} - \text{current liabilities}}$	A measure of the extent to which the firm's working capital is tied up in inventory.

Contd...

		Notes
<b>Leverage ratios</b>		
1. Debt to assets ratio	$\frac{\text{Total debt}}{\text{Total assets}}$	Measures the extent to which borrowed funds have been used to finance the firm's operations. Debt includes both long-term debt and short-term debt.
2. Debt to equity ratio	$\frac{\text{Total debt}}{\text{Total stockholder's equity}}$	Provides another measure of the funds provided by creditors versus the funds provided by owners.
3. Long-term debt to equity ratio	$\frac{\text{Long-term debt}}{\text{Total stockholders equity}}$	A widely used measure of the balance between debt and equity in the firm's long-term capital structure.
4. Times' interest earned (or coverage) ratio	$\frac{\text{Profits before interest and taxes}}{\text{Total interest charges}}$	Measures the extent to which earnings can decline without the firm becoming unable to meet its annual interest costs.
5. Fixed charge coverage	Profits before taxes & interest + $\frac{\text{Lease obligations}}{\text{Total interest charges + Lease obligations}}$	A more inclusive indication of the firm's ability to meet all of its fixed charge obligations.
<b>Activity ratios</b>		
1. Inventory turnover	$\frac{\text{Sales}}{\text{Inventory of finished goods}}$	When compared to industry averages, it provides an indication of whether a company has excessive or perhaps inadequate finished goods inventory.
2. Fixed assets turnover	$\frac{\text{Sales}}{\text{Fixed Assets}}$	A measure of the sales productivity and utilization of plant and equipment.
3. Total assets turnover	$\frac{\text{Sales}}{\text{Total Assets}}$	A measure of the utilization of all the firm's assets; a ratio below the industry average indicates the company is not generating a sufficient volume of business, given the size of its asset investment.
4. Accounts receivable turnover	$\frac{\text{Annual credit sales}}{\text{Accounts receivable}}$	A measure of the average length of time it takes the firm to collect the sales made on credit.
5. Average collection period	$\frac{\text{Accounts receivable}}{\text{Total sales/365}}$ Or $\frac{\text{Accounts receivable}}{\text{Average daily sales}}$	Indicates the average length of time the firm must wait after making a sale before it receives payment.
<b>Other ratios</b>		
1. Dividend yield on common stock	$\frac{\text{Annual dividends per share}}{\text{Current market price per share}}$	A measure of the return to owners received in the form of dividends.
2. Price earnings ratio	$\frac{\text{Current market price per share}}{\text{After tax earnings per share}}$	Faster growing or less risky firms tend to have higher price-earnings ratios than slower growing or more risky firms.
3. Dividend payout ratio	$\frac{\text{Annual dividends per share}}{\text{After tax earnings per share}}$	Indicates the percentage of profits paid out as dividends.
4. Cash flow per share	$\frac{\text{After tax profits + Depreciation}}{\text{Number of common shares outstanding}}$	A measure of the discretionary funds over and above expenses that are available for use by the firm.

**Notes**

**Self Assessment**

Multiple Choice Questions:

14. The centres in which inputs or expenses are measured in monetary terms and outputs are measured in physical terms are called .....  
(a) Discretionary expense centres      (b) Engineered expense centres  
(c) Principle expense centres      (d) Regulatory expense centres
15. Costs such as direct labour and direct material that can be estimated to a reasonable extent by the management are called .....  
(a) Engineered cost      (b) Discretionary costs  
(c) Labour costs      (d) Product costs



*Case Study*

**Nataraj Company**

**N**ataraj Company is a highly diversified company which grants its division executives a significant amount of authority in operating the divisions. Each division is responsible for its own sales, pricing, production, and cost of operations and the management of accounts receivables, inventories, accounts payables and use of existing facilities. Cash is managed by Corporate headquarters, all cash in excess of normal operating needs of the divisions is transferred periodically to corporate headquarters for redistributions or investment.

The division executives are responsible for presenting requests to corporate management for investment projects. The proposals are analyzed and documented at corporate headquarters. The final decision to commit funds to acquire equipment, to expand existing facilities, or for other investment projects is necessitated by Nataraj's Capital allocation policy.

The corporation evaluates the performance of division executives by the return on investment (ROI) measures. The asset base is comprised of fixed assets employed plus working capital exclusive of cash.

The ROI performance of division executive is the most important appraisal factor for salary changes. In addition, the annual performance bonus is based on the ROI results, with increase in ROI having a significant impact on the amount of the bonus.

The Nataraj Corporation adopted the ROI performance measure and related compensation procedures about 10 years ago. The company did so to increase the awareness of divisional management of the importance of the profit asset relationship and to provide additional incentive to the division executives to seek investment opportunities.

The company seems to have benefited from the program. The ROI for the corporation as a whole increased during the first years of the program. Although the ROI has continued to grow in each division, the corporate ROI has declined in recent years. The corporation has accumulated a sizeable amount of cash and short - term marketable securities in the past 3 years.

*Contd...*

The corporate management is concerned about the increase in the short-term marketable securities. A recent article in a financial publications suggested that the use of ROI was over emphasized by some companies, with results similar to those experienced by Nataraj.

**Notes****Questions**

1. Describe the specific actions divisions managers might have taken to cause the ROI to grow in each division but decline for the company. Illustrate your explanation with appropriate examples.
2. Explain using the concepts of goal congruence and motivation of division executives, how Nataraj's over emphasis on the use of the ROI measure might result in the recent decline in the company's return on investment and the increase in cash and short-term marketable securities.
3. What changes could be made in Nataraj Company's Corporation policy to avoid this problem? Explain your answer.

## **4.11 Summary**

- Responsibility accounting involves accumulating and reporting costs (and revenues) on the basis of the manager who has the authority to make the day today decisions about the items.
- Under responsibility accounting, a manager's performance is evaluated on matters directly under that manager's control.
- A responsibility centre is an organization unit which is headed by a manager who is responsible for its activities. There are four types of responsibility centres-revenue centres, expense centres, profit centres and investment centres Performance in second centre is judged by the criteria of efficiency and effectiveness. In revenue centres, revenues are measured and controlled separately from expenses.
- A profit centre is an organization unit in which both revenues and expenses are measured in monetary terms. In setting up a profit centre a company devolves decision-making power to those lower levels that possess relevant information for making expense/revenue trade-offs.
- In an investment centre profit is compared with the assets employed in earning it.
- There are two types of expense centres: engineered and discretionary. In engineered expense centres, it is possible to estimate the 'right' amount of costs that should be incurred to produce a given level of output.
- In the discretionary expense centres, on the other hand, budgets describe the amounts that can be spent, but it is not possible to determine with exactitude the optimum levels of these expenses. Therefore financial controls are not intended to measure efficiency and effectiveness.
- Measuring profit in a profit centre involves judgments regarding how revenues and expenses should be measured also. In terms of revenue, choice of a revenue recognition method is important.
- In terms of expenses measurement can range from variable costs incurred in the profit centre to fully allocated corporate overhead, including income taxes. Judgments regarding the measurement of revenues and costs should be guided not just by technical accounting considerations, but more importantly by behavioural considerations.

- Notes**
- The key is to include those expenses and revenues in profit centre managers' reports that the managers can influence, even if they cannot totally control them.
  - For the evaluation of profit centre and investment centre two parameters are being used - ROI and EVA.
  - ROI is the earning capability of the unit/company on the capital invested. It can be viewed as the product of two components namely, profit contribution margin and assets turnover.
  - Economic Value Added (EVA) is the amount in Rupees that remains after deducting an "implied" interest charge from operating income. The implied interest charge reflects an opportunity cost, and is charged on the amount of assets in each investment centre.

## **4.12 Keywords**

***Cost Centre:*** Any responsibility centre that has control over the incurrence of cost

***Economic Value Added (EVA):*** Amount in Rupees that remains after deducting an "implied" interest charge from operating income

***Expense Centre:*** Responsibility centres whose inputs, or expenses are measured in monetary terms, but in which outputs are not measured in monetary terms.

***Investment Centre:*** Inputs are measured in terms of cost/expenses and outputs are measured in terms of revenues and in which assets employed are also measured.

***Profit Centre:*** Financial performance is measured in terms of profit

***Responsibility Accounting:*** System of control by delegating and locating the responsibility for costs

***Responsibility Structure:*** The responsibility structure of an organisation consists of responsibility centres and related performance measurement systems.

***Return on Investment (ROI):*** Earning capability of the unit/company on the capital invested

***Revenue Centre:*** outputs (revenues) are measured in monetary terms, but no formal attempt is made to relate inputs (i.e. expenses or costs) to outputs

## **4.13 Review Questions**

1. Analyse the difference between reporting under responsibility accounting and budgeting.
2. List out the steps for introducing Control through Responsibility Accounting.
3. "If there are high points, then there also are loopholes in Responsibility Accounting". Substantiate.
4. Can control of all costs and revenues be done at some level of responsibility within the company?
5. Elucidate the following:
  - (i) Responsibility Accounting for Cost Centres
  - (ii) Responsibility Accounting for Profit Centres
  - (iii) Responsibility Accounting for Investment Centres
6. Describe the basic types of responsibility centers. Correlate the measurement of inputs and outputs with reference to different types of responsibility centers.

- |  | Notes |
|--|-------|
| 7. Differentiate between engineered expense centers and discretionary expenses centers.<br>Give examples.  | Notes |
| 8. What different approaches are required in budgeting with regard engineered expenses and discretionary expense. How performance is measured in such cases?                         | Notes |
| 9. Describe the merits and demerits of using profit centre and cost centre (a) as ways of measuring management performances and (b) as an aid to planning and control at all levels. | Notes |
| 10. How do you describe the bench marking for evaluation of performance of responsibility centre?  | Notes |
| 11. What do you understand by ROI analysis? What are the problems involved in ROI Analysis?  | Notes |
| 12. Why is ROI classified as a composite performance measures? Explain its significance.   | Notes |
| 13. Define residual profit/EVA. Discuss its suitability as a performance measure.  | Notes |
| 14. What kind of performance is measured in profit centers? What are the criteria for evaluating that performance?   | Notes |
| 15. Explain why a decision centres should be treated as a profit centre rather than as a cost centre.  | Notes |
| 16. Explain briefly the elements of profit centre performance.   | Notes |
| 17. Why must profit centers be evaluated and/or ranked? What problems arise when undue emphasis is placed on the comparison of segment profit performance?                           | Notes |
| 18. What are the alternatives investment base used for ROI and RI evaluation? Which is the base normally used and why?   | Notes |
| 19. Why distinction should be made between the performance of the division manager and the performance of the division as an investment by the corporate?                            | Notes |
| 20. Analyse the concept of responsibility accounting. What are the prerequisites and limitations of responsibility accounting?   | Notes |
| 21. "Exclusive reliance on a single financial measure may be inadequate and use of numerous criteria may be confusing." Discuss.   | Notes |
| 22. XYZ Company has three divisions X, Y and Z, for the current year, the following data were reported:  | Notes |

	<b>X</b>	<b>Y</b>	<b>Z</b>
Sales Revenue (₹)	8,00,000	?	?
Profit (₹)	80,000	6,40,000	?
Investment (₹)	4,00,000	?	20,00,000
Investment turnover	?	4	?
Margin of profit on sales	?	?	0.15
ROI	?	0.2	?
Residual income using 10% cost of capital (₹)	?	?	2,02,000

Required:

- (i) Complete the table
- (ii) Rank the division in terms of their effective use of resource in capturing the market.

- Notes**
23. P company plastics division had a return on investment on gross assets of 15 percent for the year. The divisions return on investment on net assets was 20 percent, and on net assets employed ROI was 24 percent. The divisions net income for the year was ₹ 4,50,000 and residual income was ₹ 85,000. The only contra-assets accounts the division has are accumulated depreciation accounts.

Required Compute:

- (a) The target income used in computing residual income
- (b) The company's gross assets
- (c) The company's total amount of accumulated depreciation
- (d) The amount of assets not employed in the business

24. G Auto Equipment company is organized into three divisions operated as investment centers. Data for 3 years for the shock - Absorber division are as follows:

	Year 3	Year 2	Year 1
Sales	12,10,000	11,00,000	10,00,000
Cost of goods sold	7,00,000	6,00,000	5,00,000
Operating expenses	3,00,000	2,50,000	2,00,000
Current Assets	1,50,000	1,20,000	1,00,000
Fixed Assets	20,00,000	20,00,000	20,00,000
Accumulated depreciation	14,00,000	11,00,000	8,00,000

Required:

- (a) Compute net income for each year
- (b) Compute ROI for each year using total gross assets
- (c) Compute ROI for each year using total net assets
- (d) What is the trend to the divisions performance.

### **Answers: Self Assessment**

- |         |         |
|---------|---------|
| 1. (b)  | 2. (b)  |
| 3. (c)  | 4. (c)  |
| 5. (d)  | 6. (b)  |
| 7. (c)  | 8. (d)  |
| 9. (a)  | 10. (a) |
| 11. (c) | 12. (a) |
| 13. (d) | 14. (b) |
| 15. (a) |         |

### **4.14 Further Readings**



Books

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "*Management Control and Reporting System*", Response Books.

**Notes**

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "*Management Control System: Text and Cases*", Pearson Education Asia.

Saravanel, P, "*Management Control System*", Himalaya Publishing House.



*Online links*

[maaw.info/ResponAccMain.htm](http://maaw.info/ResponAccMain.htm)

[harvardbusiness.org/...responsibility-accounting.../105009-PDF-ENG](http://harvardbusiness.org/...responsibility-accounting.../105009-PDF-ENG)

[hubpages.com/.../Management-Accounting-Responsibility-Accounting](http://hubpages.com/.../Management-Accounting-Responsibility-Accounting)

[www.oecd.org/dataoecd/21/48/42189238.pdf](http://www.oecd.org/dataoecd/21/48/42189238.pdf)

[www.download-it.org/.../filePages%20from%20Chapter%209%20Responsibility%20Centres](http://www.download-it.org/.../filePages%20from%20Chapter%209%20Responsibility%20Centres)

## Unit 5: Transfer Pricing

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### Objectives

After studying this unit, you will be able to:

- Discuss the meaning of transfer pricing
- Identify the Methods for transfer Pricing
- Explain the administration of transfer prices

### Introduction

Today's organizational thinking is oriented towards decentralization. One of the principal challenges in operating a decentralized system is to devise a satisfactory method of accounting for the transfer of goods and services from one profit centre to another in companies that have a significant number of these transactions. In this unit we will discuss various approaches to arriving at transfer prices for transactions between profit centres and the system of negotiation and arbitration that is essential when transfer prices are used.

### 5.1 What is Transfer Pricing?

In a decentralized profit centre, the monetary value at which the transfer of goods and services from one profit centre to another profit centre is accounted for, for the evaluation of performance of profit centre is termed as transfer pricing. The transfer price is the mechanism for distributing

the revenue that is generated when the product is finally sold. The transfer price is not primarily an accounting tool. Rather, it is a behavioural tool that motivates managers to take the right decisions.

**Notes**

### **5.1.1 Objectives of Transfer Pricing**

In particular, transfer price should be designed in such a way that it can accomplish the following objectives:

1. It should provide each segment with the relevant information required to determine the optimum trade-off between company costs and revenues.
2. It should induce goal congruence decisions i.e., the system should be so designed that decision improves business unit (divisional) profits it will also improve company profit.
3. It should help determine the economic performance of the individual profit centres as accurately as possible.
4. The system should be simple to understand and easy to administer.

## **5.2 Market Price as Transfer Price**

Where the intermediate market is competitive and where interdependencies of subunits are minimal, market price is the most desirable transfer price because it generally leads to optimum decisions. There are no inherent conflicts in solving all three problems (goal congruence, incentive and autonomy). The guidelines are (a) a market or negotiated market price should be used (b) the seller should have the option of not selling internally i.e., the seller might have more profitable alternative opportunities for using the facilities to sell other products (c) an arbitration procedure should be available for settling disputes.

In many instances, a lower price may easily be justified, particularly when large purchases are made, when selling costs are less, or when an advantage is obtained through an exclusive supplier contract through a cost-plus arrangement assuming profits in all cases. These situations lead to negotiated market prices (whereby the cost savings to the firm as a whole are split between the selling and buying divisions through bargaining).

### **5.2.1 Pitfalls in Market Prices**

Few markets are perfectly competitive or that no intermediate market exists for the exact product or service in question. Moreover, isolated price quotations are sometimes temporary distress or dumping prices for excess inventories that must be quickly liquidated in financial emergencies.

Many product parts are unique, a situation that causes considerable costs for preparing bids. If an outside supplier prepares a few bids and discovers that the internal supplier division always wins, the so-called resulting market prices either will not be forthcoming in future or will be unreliable.



*Notes* If there is idle capacity, incongruent decisions may be caused by rigid adherence to a market price.

**Notes****5.2.2 Alternatives to Market Prices**

Sometimes market prices are unavailable, inappropriate or too costly to be used for transfer pricing.

**Full cost basis:** If the transfers are based on actual costs, the performance of the receiving decisions will bear the accumulated efficiencies or inefficiencies of other divisions subject to their control. Therefore, some version of standard pre-budgeted costs is better than actual costs because it gives incentive to control cost but that also will lead to suboptimal decisions and goal incongruence.

**Cost plus as a synthetic market price:** Since, the transferred product or service in question is often slightly different in quality or other characteristics from that available from outside sources, cost plus pricing is considered "satisfactory" as an approximation of an outside market price. The alternative getting 'real' market prices - is perceived as being too costly for incorporating into a routine control system.

**Variable cost plus lump sum:** Top management often wants the buyer - division manager to make month-to-month purchasing decisions based on the variable costs of the supplier division. A separate predetermined lump sum charge is made for fixed costs plus a lump sum profit; this charge may be made annually or monthly. It is based on an annual expectation of quantity, not on actual purchases. This is also known as two-step pricing.



*Example:* The following information is given:

Business Unit X (manufacturer)	Product A
Expected monthly sales to business unit Y	500 units
Variable cost per unit	₹ 5/-
Monthly fixed costs assigned to product	₹ 20,000/-
Investment in working capital & facilities	1200,000
Competitive return on investment per year	10%
One way to transfer product A to business unit Y is at a price per unit, calculated as follows:	

**Transfer price for Prod A**

Variable cost per unit	₹ 5/-
Plus fixed cost per unit	₹ 4/-
Plus profit per unit	₹ 2/-
Transfer price per unit	₹ 11/-

$$10\% \text{ of monthly investment percent} = \frac{1200,000/12 \times 0.10}{5000} = ₹ 2$$

**The system works as under:** The transfer price of ₹ 11 per unit is a variable cost so far as unit Y is concerned. However, the company's variable cost for product A is ₹ 5/- per unit. Thus, unit Y does not have the full information to make appropriate short-term marketing decisions. i.e., if unit Y knew the company's variable costs.



 Example: It can safely take business decisions to sell less than its normal price under certain circumstances.

## Notes

Two-step pricing solves the problem by transferring a variable cost per unit basis and later changing fixed cost and profit on a lump sum basis. Under this method, the transfer price will be ₹ 5/- for each unit that Y purchases plus ₹ 20,000/- per month for fixed costs and ₹ 10,000 per month for profit.

If transfer of product A on a certain month is 5000, unit Y will pay variable cost of ₹ 25,000 ( $5000 \times ₹ 5$ ) plus ₹ 30,000 for fixed cost and profit totaling ₹ 55,000/- same as if the transfer price is ₹ 11/-.

If transfer is less than 5000 say 4000, unit Y will pay variable cost of ₹ 20,000 ( $4000 \times ₹ 5$ ) plus 30,000 i.e., ₹ 50,000 as compared to ₹ 44,000 if the transfer price is ₹ 11/- . The difference of paying extra is the penalty for not using the capacity of X which was reserved.

If transfer is more than 5000, say 6000, unit Y will pay variable cost of ₹ 30,000 ( $600 \times ₹ 5$ ) plus ₹ 30,000 i.e., ₹ 60,000 which is less than ₹ 66,000 i.e., transfer price of ₹ 11/- per unit. This represents the savings unit X would have because it can produce the additional units without incurring additional fixed costs.

### **Prorating the Overall Contribution**

Impose a variable cost transfer price but credit each division for a prorated share of the overall contribution to corporate profit. The proportion may be negotiated in any number of ways. This method may be appropriate if the demand for the manufactured product is not steady enough to warrant the permanent assignment of facilities. There are several practical problems in implementing such a profit-sharing system e.g. dispute over the way contribution is divided requiring senior managements intervention, valid information on the profitability of each segment is not possible, sharing of contribution depends on marketing units' ability to sell which is perceived by manufacturing units as unfair.

## Two Sets of Prices

The manufacturing unit's revenue is credited at the outside sales price minus a percentage to cover marketing costs, and the buying unit is charged with variable standard cost (or sometimes, the total standard cost). The difference is charged to a headquarter's account and eliminated when the business unit statements are consolidated. This transfer pricing method is sometimes used when there are conflicts between the buying and selling units that cannot be resolved by one of the other methods. There are several disadvantages of having two sets of transfer prices: (i) the sum of the business profits is greater than overall company profits, (ii) this system creates an illusive feeling that business units are making money, while in fact, the overall company might be losing after considering debits to headquarters, (iii) this system motivates business units to concentrate more on internal transfer, (where they are assured of a good markup) at the expense of outside sales, (iv) there is additional book keeping involved in the first debiting the headquarters account every time a transfer is made and then eliminating this account when business units statements are consolidated.

## **Self Assessment**

## Multiple Choice Questions:

1. For a profit centre selling the goods, the transfer price is the major determinants of:

  - (a) Sales and profits
  - (b) Revenue and sales
  - (c) Revenue and profits
  - (d) Sales and expenses

- Notes**
2. In cost-based transfer pricing, which costing methods are used?
    - (a) Standard cost for computing cost      (b) Full cost for computing cost
    - (c) Arbitrary costing methods      (d) Direct cost for computing costs
  3. Which of the following should be treated as incremental cash flows when deciding whether to invest in a new manufacturing plant? The site is already owned by the company, but existing buildings would need to be demolished.
    - (a) The market value of the site and existing buildings.
    - (b) Demolishing costs and site clearance.
    - (c) The cost of a new access road put in last year.
    - (d) Lost earnings on other products due to executive time spent on the new facility.
    - (e) A proportion of the cost of leasing the president's jet aeroplane.
    - (f) Future depreciation of the new plant.
    - (g) The reduction in the company's tax resulting from tax depreciation of the new plant.
    - (h) Money already spent in engineering design of the new plant.
  4. The pricing that measures the exchange of products and services between responsibility centres within the company is known as:
    - (a) Zone pricing      (b) Transfer pricing
    - (c) Location pricing      (d) Time pricing
  5. Transfer pricing affects the level of taxes paid for a given level of income before taxes in the case of a:
    - (a) Multinational firm      (b) Domestic firm
    - (c) Joint venture      (d) Domestic subsidiary

### **5.3 Method for Transfer Pricing**

Market price is not a cure-all answer to the problem of setting transfer price because of non-existence of an intermediate markets for a highly specialized product component. If an optimal economic decision is wanted in a particular situation, the following general rule serves as the helpful first step in the analysis. The minimum transfer price should be (a) the additional outlay costs incurred to the point of transfer (sometimes approximated by variable costs) plus (b) opportunity costs of the firm as a whole. This is the price that would make the supplying division indifferent as to whether the output were sold inside or outside; the supplying division's contribution would be the same under either choice.

The term outlay cost represents the cash outflows that are directly associated with the production and transfer of the goods or services, not necessarily have to be made at a particular instance.

Opportunity costs are defined as the maximum contribution to profits foregone by the firm as a whole if the goods are transferred internally. An opportunity cost is a cost that measures the opportunity that is lost or sacrificed when the choice of one course of action required that an alternative course of action be given up.

**Notes**

*Example:* A company has an opportunity to obtain a contract for the production of a special component. This component will require 100 hours of processing on Machine X. Machine X is working at full capacity on the production of Product A, and only way to fulfil the contract is by reducing the output of A. This will mean a loss of revenue of ₹ 200/-. The contract also involves the incurring of additional variable cost of ₹ 1000/-.

If the company takes on the contract, it will sacrifice revenue of ₹ 200/- from the lost output of product A. This represents an opportunity cost and should be included as part of the cost when negotiating for the contract. The contract price should at least cover the additional cost of ₹ 1000/- plus the ₹ 200/- opportunity cost to ensure that the company will be better off in the short-run by accepting the contract.

It may be noted that opportunity costs only apply to the use of scarce resources. Where resources are not scarce, there is no sacrifice from using these resources. If in the above case, machine X was operating at 80% of the potential capacity, then acceptance of the contract would not have reduced production of A. Consequently, there would have been no loss of revenue and the opportunity cost would be zero.

This opportunity cost, as observed, is of vital importance for decision-making.

Transfer pricing per se does not affect the total profit of an organization since the receiver/user department has to pay for the materials received and the giver department will receive the payment on account of materials transferred to other departments—the transaction cancels out at the time of calculating the total profit of the company. It only affects the profitability of both giver and user departments. What matters is the effect of the transaction on the variable and fixed costs of the respective departments.



*Example:* The MK Company had two decentralized divisions: A and B. Division A has always purchased certain units from Division B at ₹ 7500 per unit. Because Division B plans to raise the price to ₹ 10,000 per unit, Division A desired to purchase these units from outside suppliers for ₹ 7500 per unit. Division B's costs are as follows:

B's variable costs per unit      ₹ 7000

B's annual fixed costs      ₹ 15,00,000

B's annual purchase of these 100,000 units for A

Required: If Division A buys from the outside supplier, the facilities Division B uses to manufacture these units would remain idle. Would it be more profitable for the company to enforce the transfer price of ₹ 10,000 per unit than to allow A to buy from outside suppliers at ₹ 7500 per unit?

**Solution:**

In this case, there are two options: (i) To enforce the transfer price of ₹ 10,000 per unit for 100,000 units transferred from Division B to Division A, or, (ii) To allow A to buy from outside suppliers at ₹ 7500 per unit.

**Notes**

*Option 1:*

	Division A ₹ lakhs	Division B ₹ lakhs	Total company ₹ lakhs
Transfer from Division B @ ₹ 10,000 per unit	Expenses 10,000		0
B's variable cost @ ₹ 7000 per unit		7000	7000
B's annual fixed costs		15	15
Transfer from Division B @ ₹ 10,000 per unit		Income 10,000	-
Total expenses	10,000	(-) 2985	7015

*Note:* Please note that transfer price does not affect the total company's profitability (in one division it is income and in the other division it is expense), it only affects the divisional profitability.

*Option 2:*

	Division A ₹ lakhs	Division B ₹ lakhs	Total company ₹ lakhs
External purchase @ ₹ 7500 per unit	7500		7500
B's variable cost @ ₹ 7000 per unit		0	0
B's annual fixed costs		15	15
			-
Total expenses	7500	15	7515

Hence, the first option is profitable since it gives the overall lower cost.

*Practical problems on transfer pricing:*



*Example:* The AB Company has two divisions: X and Y. One of the parts produced by division X is used in the manufacture of a product that is assembled at Division Y. This part is not unique and there is readily defined market such that X can sell outside the firm and Y can buy from outside.

The following details are available in respect of Division X:

Capacity to produce the part	125,000 units
External sales at ₹ 100 per unit	100,000 units
Transfer to Division Y	25,000 units
<b>Costs:</b> Variable manufacturing cost per unit	₹ 84
Variable selling costs	
(On external sales only but not incurred on internal transfers)	2
Fixed manufacturing cost (based on 125,000 units)	6
Fixed selling cost (based on 100,000 units)	1

Division Y represents the following data on the assumption of a volume of 25,000 units (one part is needed for each unit of its own production):

Variable manufacturing cost per unit	₹ 100
(Exclusive of transfer price or outside purchase price)	
Variable selling expenses per unit	6

	10	<b>Notes</b>
Fixed manufacturing cost	10	
Fixed selling expenses	4	
Selling price of finished product	240	

Required:

1. If Division X could sell 125,000 units as ₹ 100 each in the outside market, what transfer price, would the central management prefer in order to provide proper motivation to Division Y?
2. As management accountant, would you advise Division Y to buy at the transfer price determined in part (1)?
3. Assume transfer price as in (1) if selling price drops to ₹ 200, should Y buy at that price? Would this be desirable from the point of the firm, why?
4. Assume that Division X's product did not have an outside demand in excess of 100,000 units and its total fixed manufacturing cost could be reduced by 10%, if the volume of production were reduced to 100,000 units, what is the appropriate transfer price?
5. Suppose that X division's maximum outside demand is 110,000 units at ₹ 100 and there is no other usage for the capacity. What transfer prices should the company management prefer.
6. Suppose the unit selling price of Y's product is ₹ 180; one of its customers is also a customer of Division X; division Y refuses to buy the part from the outside market at ₹ 100 since the selling price of ₹ 180 would not cover the variable costs, if Division X does not cover the transfer price, Division Y will not sell to this customer, who in turn will probably cancel the usual order of 50,000 units to Division X; there is no other demand for the product and no other usage of X capacity; fixed costs would not change at either division. What is the lowest transfer price that the Division X would be advised to accept? Support your recommendation with computations.

*Solution:*

1. Fixing of transfer price:

Variable manufacturing cost of Division X	₹ 84
Opportunity cost (in terms of contribution foregone by transfer to division Y)	
Selling price	₹ 100
Less total variable costs to make and sell (₹ 84 + 2)	86
	14
	98

In this case, if X could sell 125,000 units (both transfer to Division Y of 25,000 units and its external sales of 1,00,000 units), it earns a contribution of ₹ 14 per unit which need to be compensated by the receiver Division Y, hence, transfer price of ₹ 98 as worked out above will be preferred by the central management.

4. Appropriate transfer price/unit

Variable cost	₹ 84
Plus opportunity cost (in terms of reduction of fixed	
Manufacturing cost	
Present cost of manufacturing	125000 × 6 = 750,000

<b>Notes</b>	10% reduction if volume drops Which should be borne by 25000 unit's ?	75000 ₹ 3 per unit
		<u>87</u>
5.	Transfer price:  Out of 125,000 units, market can absorb 110,000 units, Hence, for balance 15000 units opportunity cost is zero The transfer price for 15000 units will be variable cost i.e.,	₹ 84
	10000 units as for part (1)	₹ 98
2.	Contribution per unit - Division Y  Selling price	240
	Less variable cost	
	Manufacturing costs (Division Y)	100
	Transfer price from Division X	98
	Variable selling expenses	6 204
	Contribution margin per unit	36
	Yes, division Y is advised to buy from division X	
3.	Division Y:  Revised selling price	200
	Less variable cost (Part II)	204
	Contribution	-4
	Firm	Sell externally Transfer to Y
	Selling price per unit	₹ 100 ₹ 200
	Out of pocket expenses	
	Division X	86 84
	Division Y	- 106
	Contribution margin	14 10

Therefore, Division Y should not buy at that price. Yes, it would be desirable from the stand point of the firm, not to buy at that price due to higher contribution margin on external sales.

6. Determination of transfer price:

Sales revenue  $50000 \times 100$   
₹ 50,00,000

Less variable manufacturing & selling  $50000 \times 86$   
₹ 43,00,000

	Notes
Opportunity cost of losing sale of 50000 units ₹ 7,00,000	
Variable cost of production of 25000 units @ ₹ 84	₹ 21,00,000
Less opportunity cost of cost sales (as per above) ₹ 7,00,000	
Lowest transfer price of 25,000 units ₹ 14,00,000	
Hence, transfer price per unit	$\frac{14,00,000}{25,000} = ₹ 56/\text{unit}$



*Example:* AB Cycles has two divisions, A and B, which manufactures bicycles. Division A produces bicycle frames and Division B assembles rest of the bicycle on the frame. There is a market for subassembly and the final products. Each division has been treated as a profit centre. The transfer price has been set at the long run average market price. The following data are available for each division:

Estimated selling price of final product	- ₹ 3000/- per unit
Long run average market price of subassembly	- ₹ 2000/- per unit
Incremental cost of completing subassembly in Division B	- ₹ 1500/- per unit
Incremental cost in Division A	- ₹ 1200/- per unit.

**Required:**

1. If Division A's maximum capacity is 1000 units p.m. and sales to the intermediate market outside are now 800 units. Should 200 units be transferred to Division A on long-term average market price basis?
2. What should be the transfer price if manager of division A should be kept motivated?
3. If outside market increases to 1000 units, should Division A continue to transfer 200 units to Division B or sell entire production to outside market?

The answer should be backed up by explanations and relevant calculations.

**Solution:**

These are markets for (i) final products, that is, complete cycle and (ii) subassemblies. Capacity restriction is 1000 units in division A which produces bicycle frames.

**Option 1:** Complete Cycle

Now contributions on production of complete cycle:

Sales per unit	₹ 3000
Low variable cost      Div. A	1200
Div. B	1500
Contribution	<hr/> ₹ 300

**Notes**

**Option 2:**

Again, contribution on production and sale of assemblies:

Sale value of assembly per unit	₹ 2000
Less Variable cost of assemblies at Div. B	₹ 1500
Contribution per unit	₹ 500

Hence, from the total company's point of view, sales of assemblies to outside market is more profitable by ₹ 200/- (₹ 500 - ₹ 300)

1. If sales to the intermediate outside are 800 units, the company should go for such sales rather than manufacturing complete cycle. 200 units can be transferred to division A, because the company as a whole will earn profit though Division A will earn loss if the transfer is made at long run average market price basis. The position will be as follows:

	Division A	Division B	Total company
Sales to outside:			
Complete cycle 200 units @ ₹ 3000	₹ 600,000		₹ 600,000
Assemblies 800 units @ ₹ 2000		16,00,000	1600,000
Transfer to Division A 200 × 2000		4,00,000-	-
	6,00,000	20,00,000	2200,000

	Division A	Division B	Total company
Variable cost:			
Div. A 200 units@ ₹ 1200 per unit	2,40,000		240,000
Div. B 1000 units@ 1500 per unit		15,00,000	15,00,000
Transfer from Div. B	400,000		
	640,000	1500,000	1740,000
Contribution	(-)40,000	5,00,000	460,000

2. With transfer price of ₹ 2000, Division A is losing ₹ 3000 - ₹ 2000 - ₹ 1200 per unit = ₹ 200 per unit

Whereas Division B is having contribution of ₹ 2000 - 1500 = ₹ 500 on its external sales of 800 units and 200 units transfer to Division A for complete cycle. The company for complete cycle is earning ₹ 300 per unit.

The contribution of ₹ 300 per unit should be shared between Div. A and Div. B. The transfer price will be variable cost of ₹ 1200 p. u. plus something i.e., ₹ 167/- (on the ratio of variable cost 1200 : 1500) = ₹ 1667 to get motivated.

3. Since the sales of subassemblies are contributing more per unit (₹ 500 against 300) than complete cycle, it should sell 1000 units as subassemblies in the outside market.



*Example:* A transportation equipment manufacturer is heavily decentralized. Each division head has full authority on all decisions regarding sales to internal or external customers. Division 'P' has always acquired a certain equipment component from Division 'S'. However, when informed that Division 'S' was increasing its unit price to ₹ 220, Division P's management decided to purchase the component from outside suppliers at a price of ₹ 200/-. Total annual capacity of Division 'S' is 2000 units per annum.

Division 'S' had recently acquired some specialized equipment that was used primarily to make this component. The manager cited the resulting high depreciation charges as the justification for the price boost. He asked the president of the company to instruct Division 'P' to buy from 'S' at the ₹ 220 price. He supplied the following:

P's annual purchases of the component      2000 units

S's variable cost per unit      ₹ 190

S's fixed cost per unit      ₹ 20

1. Suppose there are no alternative uses of the 'S' facilities:

- i. Will the company as a whole benefit if 'P' buys from the outside suppliers for ₹ 200/- per unit?
- ii. Suppose the selling price of outsiders drops another ₹ 15 to ₹ 185 should 'P' purchase from outsiders.
- iii. Suppose (disregarding ii above) that S could modify the component at an additional variable cost of ₹ 10 per unit and sell the 2000 units to other customers for ₹ 225. Would the entire company then benefit if P purchased the 2000 components from outsiders at ₹ 200 per unit.

2. Suppose it is possible to lease out internal facilities:

- iv. If internal facilities are leased out for ₹ 29000 p.a. should 'P' purchase from outsiders at ₹ 200 per unit.

*Solution:*

1. (i) Company will not benefit if 'P' buys from outside:

Purchase cost from outside	2000 × 200	₹ 400,000
<i>Less:</i> Saving in cost variable	1900 × 190	₹ 380,000
by reducing output of S		
Net Cost to the company as a whole		₹ 20,000

(ii) Company will benefit if 'P' buys from outside:

Purchase cost from outside	2000 × 185	₹ 370,000
<i>Less:</i> Saving in cost variable	2000 × 190	₹ 380,000
Net cost (benefit) to the company		(₹ 10,000)

(iii) Company will benefit if 'P' buys from outside:

Purchase cost from outside	2000 × 200	₹ 400,000
Add additional variable cost	2000 × ₹ 10	₹ 20,000
Sale proceeds for other customs	2000 × 225	₹ 450,000
Net cost (benefit) to the company		(₹ 30,000)

2. (iv) The company will benefit if P buys from outside at ₹ 200 per unit

Purchase cost from outside	2000 × ₹ 200	₹ 400,000
<i>Less:</i> Saving in cost (Variable) by reducing Div. S's output		2000 × ₹ 190

**Notes**

<b>Notes</b>	<b>Less:</b> Revenue for leasing and facilities	₹ 29,000
	Net cost (benefit) to the company as a whole	(₹ 9,000)



*Example:* A company is organized on decentralized lines, with each manufacturing division operating as a separate profit centre. Each division manager has full authority to decide on sale of the division's output to outsiders and to other divisions.

Decision C has always purchased its requirements of a component from Division A. But when informed that Division A was increasing its selling price to ₹ 150, the manager of Division C decided to look at outside suppliers.

Division C can buy the component from an outside supplier for ₹ 135. But Division A refuses to lower its prices in view of its need to maintain its return on the investment.

The top management has the following information:

C's annual purchase of the component	1000 units
A's variable costs per unit	₹ 120
A's fixed cost per unit	₹ 20

Required:

1. Will the company as a whole benefit, if Division C bought the component at ₹ 135 from an outside supplier?
2. If A did not produce the material for C, it could use the facilities for other activities resulting in a cash operating savings of ₹ 18,000. Should C then purchase from outside sources?
3. Suppose there is no alternative use of A's facilities and the market price per unit for the component drops by ₹ 20, should C buy from outside?

*Solution:*

1. Company will not benefit if C buys from outside:

Purchase cost from outside - 1000 units × ₹ 135	₹ 135,000
Less saving in cost (variable) by reducing divisional	
A output (1000 × ₹ 120)	₹ 120,000
Net cost (benefit) to the company as whole	₹ 15,000

2. Company will benefit if C purchased from outside:

Purchase cost 1000 × ₹ 135	₹ 135,000
Less savings in variable cost 1000 × 120	120,000
Savings due to A's equipment used for Other operations	18,000
	₹ 138,000

Net cost (benefit) to the company	(3000)
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3. Company will benefit if C purchased from outside:

Purchase cost 1000 × 115	₹ 115,000
Less savings in variable cost 1000 × 120	₹ 120,000
Net cost (benefit) to the company	(5000)

**Notes**

*Example:* A company has two divisions viz. machine division and tractor division. The machine division operates at full capacity and tractor division at 50% capacity. Machine division produces two products, crane shafts and tyre rims using the same labour force for each product.

The direct wages rate per production hour is ₹ 4. During the next year, its budgeted capacity of 36000 direct labour hours involves a commitment to sell 440 units of tyre rims. The balance capacity will be used for production of crane shafts. Consumption of material in a unit of crane shaft and tyre rim is 20 kgs and 10 kgs respectively.

Cost data are:

	Crane shafts (₹ per kg.)	Tyre rims (₹ per kg.)
Direct material	38	30
Direct wages	28	20

The machine division's overheads amount to ₹ 648000 per annum relating to crane shafts and tyre rims in proportions to other direct wages, out of this, ₹ 360000 is variable overhead at full capacity. Machine division prices its products with 25% markup on its total cost. If machine division sells products to tractor division, then saves 4 per kg. in variable cost for not incurring selling and distribution overhead.

The tractor division wishes to buy 75 units of crane shafts from machine division for being processed into HOCL tractors, to be sold at ₹ 8000 per tractor. The processing material and wages cost are ₹ 1500 per tractor. Each tractor requires a one-craft shaft and sufficient demand of crane shaft also exists in normal market. The fixed cost amounts to ₹ 140000 per annum.

You are required:

1. To calculate the cost and selling price per kg. of products of machine division for normal sales.
2. To prepare a report showing the profitability of machine division and tractor division and company as a whole for each of the following situations:
  - (i) The machine division transfers crane shafts at a price applicable to outside customers on the basis of total cost.
  - (ii) The machine division transfers crane shafts at a price based on total cost less credit for selling and distribution expenses of ₹ 4 per kg. Which will not be incurred in respect of sale of tractor division?
  - (iii) The machine division manufactures the quantity of crane shafts required by tractor division by employing overtime payable at double the normal wages rate and transfer at marginal cost less ₹ 4 per kg being selling and distribution cost not incurred in respect of sale to tractor division. The machine division sells the entire regular production to outside customers at usual price.

*Solution:*

Total overheads per year	₹ 648000
<i>Less:</i> Variable overheads	₹ 360000
Fixed overheads per year	₹ 288000
Variable overheads per hour = 360000/36000 = ₹ 10	[1]
Fixed overheads per hour = 288000/36000 = ₹ 8	[1]

**Notes**

1. Cost and selling price per kg of products of machine division for normal sales

	Crane shafts	Tyre rims
Direct materials	38	30
Direct wages	28	20
Variable overheads (10 × 7) (10 × 5)	70	50
Total variable cost	136	100
Fixed cost (8 × 7), (8 × 5)	56	40
Total cost	192	140
Add: mark up (25%)	48	35
Selling price	240	175

2. Committed production of tyre rims of 4400 kgs ( $440 \times 10$ ) would involve labour hours of 22000 ( $4400 \times 5$ ). The balance hours are available for production of crane shafts 14000 ( $36000 - 22000$ ).

Production of crane shafts =  $14000/7 = 2000$  hrs.

No. of crane shafts transfer to tractor division consume 1500 kgs ( $75 \times 20$ ) and balance 500 kgs (25 crane shafts) are sold in normal market.

- (i) *Profitability statement of both division and company as a whole*

Machine division	₹	Tractor division	₹
Sales:		Sales HOCL	
Crane shafts $2000 \times 240$	480000	$75 \times 8000$	600000
Tyre rims $4400 \times 175$	770000	Variable cost:	
Total sales	1250000	Transfer from Machine division $1500 \times 240$	360000
Variable cost:		Processing of material labour	112500
Crane shafts to tractor divisions $1500 \times 132$	198000	Total variable cost	472500
Normal market $500 \times 136$	68000	Fixed cost	140000
Tyre rims $4400 \times 100$	440000	Total cost	612500
Total variable cost	706000	Loss	(12500)
Fixed cost $8 \times 36000$	288000		
Total cost	994000		
Profit	256000		

Overall profit of the company ₹ 256000 - 12500 = 243500

- (ii) *Transfer price based on total cost after adjustment for selling expenses*

Machine division	₹	Tractor division	₹
Sales:		Sales HOCL	
Crane shafts $1500 \times 236$	354000	$75 \times 8000$	600000
Normal market $500 \times 240$	120000	Variable cost:	
Tyre rims $4400 \times 175$	770000	Transfer from machine division $1500 \times 236$	354000
<b>Total sales</b>	<b>1244000</b>	Processing of material labour	112500

Contd...

Variable cost:		Total variable cost	466500
Crane shafts to tractor divisions 1500*132	198000	Fixed cost	140000
Normal market 500 × 136	68000	Total cost	606500
Tyre rims 4400 × 100	440000	Loss	(6500)
Total variable cost	<b>706000</b>		
Fixed cost 8 × 36000	288000		
Total cost	994000		
Profit	<b>250000</b>		

Notes

Overall profit of the company ₹ 250000 – 6500 = 243500

- (iii) Manufacturing crane shafts supplied to tractor division by using overtime and transfer based on adjusted marginal cost.

Machine division	₹	Tractor division	₹
Sales:		Sales HOCL	
Crane shafts to tractor division 1500 × 160	240000	75 × 8000	600000
Crane shafts 2000 × 240	480000	Variable cost:	
Tyre rims 4400 × 175	770000	Transfer from Machine division 1500 × 160	240000
Total sales	<b>1490000</b>	Processing of material labour	112500
Variable cost:		Total variable cost	<b>352500</b>
Crane shafts to tractor division 1500 × 160	<b>240000</b>	Fixed cost	140000
Crane shafts in normal market 2000 × 136	272000	Total cost	492500
Tyre rims 4400 × 100	440000	Profit	<b>107500</b>
Total variable cost	<b>952000</b>		
Fixed cost 8 × 36000	288000		
Total cost	1240000		
Profit	<b>250000</b>		

Overall profit of the company ₹ 250000 + 107500 = 357500

The marginal cost and transferable price of crane shaft per kg will be

$$(38 + 56 + 70) = 164 - 4 = ₹ 160$$

Option C is most profitable, gives highest profit to the company.



*Example:* Division A of a large divisionalised organization manufactures a single standardized product. Some of the output is sold externally whilst the remainder is transferred to Division B, where it is a subassembly in the manufacture of that division's product. The unit costs of Division A's product are as follows:

Capacity to produce the part	15,000 units
External sales at ₹ 30 per unit	10,000 units
Transfer to division B	5,000 units

Notes	Costs:	
	Variable manufacturing cost per unit	₹ 10
	Variable selling costs	
	(On external sales only but not incurred on internal transfers)	1
	Fixed manufacturing cost (based on 15,000 units)	4
		<hr/>
		15

5000 units are transferred annually to Division B at an internal transfer charge of ₹ 19, which is obtained by deducting variable selling expenses from the external price since this expense is not incurred for internal transfers.

The division B incorporates the transferred in goods into a more advanced product. The unit costs of this product are as follows:

Variable manufacturing cost per unit	₹ 38
(Exclusive of transfer price)	
Variable selling expenses per unit	1
Fixed overheads	12
	<hr/>
	51

Division B's manager disagrees with the basis used to set the transfer price. He argues that the transfers should be made at variable cost plus an agreed (minimal) markup since he claimed that his division is taking output that Division A would be unable to sell at the price of ₹ 30.

Partly because of this disagreement, a study of relationship between selling price and demand has been made for each division by the company's sales director. The resulting report contains the following table:

Customer demand at various selling prices:

Division A			
Selling price	₹ 20	₹ 30	₹ 40
Demand	15,000	10,000	5000
Division B			
Selling price	₹ 80	₹ 90	₹ 100
Demand	7,200	5000	2800

The manager of Division B claims that this study supports his case. He suggests that a transfer price of ₹ 12 would give Division A a reasonable contribution to its fixed overheads while allowing Division B to earn a reasonable profit. He also believed that it would lead to an increase of output and an improvement in the overall level of company profits.

You are required:

1. To calculate the effect that the transfer pricing system has had on the company's profits, and
2. To establish the likely effect on profits of adopting the suggestion by the manager of Division B of a transfer price of ₹ 12.

*Solution:*

**Notes**

- We have seen that transfer pricing as such does not affect the profitability of the company's profits, since in one dept., it is expense and in other department, it is income which balances at the total company level. At transfer price of ₹ 19, the company's profits will be as follows:

	Division A ₹	Division B ₹	Total company ₹
External sales - 10000 units @ ₹ 30,	3,00,000		3,00,000
External sales - 5000 units @ ₹ 90,		4,50,000	4,50,000
Transfer to Division B @ ₹ 19 transfer price - 5000 units	95,000		
Total income	3,95,000	4,50,000	7,50,000

	Division A ₹	Division B ₹	Total company ₹
Transfer from Division A @ ₹ 19 per unit		95,000	
A's variable cost @ ₹ 11 for external sales and @ ₹ 10 for interdivision. Transfer	1,60,000		1,60,000
Annual fixed costs			
A's @ ₹ 4 for 15000 units	60,000		60,000
B's @ ₹ 12 for 5000 units		60,000	60,000
B's variable cost @ ₹ 39 on 5,000 units		1,95,000	1,95,000
Total expenses	2,20,000	3,50,000	4,75,000
Profit	1,75,000	1,00,000	2,75,000

- At the transfer price of ₹ 12, the effect on total company's profitability will be as follows:

	Division A ₹	Division B ₹	Total company ₹
External sales - 10000 units @ ₹ 30,	3,00,000		3,00,000
External sales - 5000 units @ ₹ 90,		4,50,000	4,50,000
Transfer to Division B @ ₹ 12 transfer price - 5000 units	60,000		
Total income	3,60,000	4,50,000	7,50,000-

	Division A ₹	Division B ₹	Total company ₹
Transfer from Division A @ ₹ 12 per unit		60,000	
A's variable cost @ ₹ 11 for external sales and @ ₹ 10 for interdiv.transfer	1,60,000		1,60,000
Annual fixed costs			
A's @ ₹ 4 for 15000 units	60,000		60,000
B's @ ₹ 12 for 5000 units		60,000	60,000
B's variable cost @ ₹ 39 on 5,000 units		1,95,000	1,95,000
Total expenses	2,20,000	3,15,000	4,75,000
Profit	1,40,000	1,35,000	2,75,000

The total profit of the company remains the same at ₹ 2,75,000.

**Notes**

**Self Assessment**

Multiple Choice Questions:

6. Which method of transfer pricing is similar to arm's length pricing in which intra-company and external customers transfers are priced the same?  
(a) Market based pricing method      (b) Cost based pricing method  
(c) Negotiating pricing method      (d) None of the above
7. In ..... buying and selling business units freely negotiate a mutually acceptable transfer price.  
(a) Cost based pricing method      (b) Arm's length pricing method  
(c) Market based pricing method      (d) Negotiating pricing method
8. What is the transfer price called if it is the difference between further processing costs, profits markup, and the selling price of the product?  
(a) Resale price method      (b) Market price method  
(c) Cost method      (d) Profit method
9. Transfer Price is the:  
(a) Amount used in accounting for any transfer of goods and services between responsibility centres.  
(b) Value place on transfer of goods or services in transactions in which at least one of the two parties involved is a profit centre.  
(c) Price that would be charged if the product were sold to outside customers or procured internally.  
(d) Both (a) and (b)

## **5.4 Administration of Transfer Prices**

Implementing transfer price involves long negotiation among the heads of various units, the classification of products and arbitration and conflict resolution in case of conflict.

### **5.4.1 Negotiation**

Business units negotiate among themselves before taking decisions relating to transfer pricing. The headquarters does not involve itself and leaves it to line managers to negotiate and come to decisions because of the following reasons:

First, the line managers of the business units may feel powerless if they are denied any say in the transfer prices and this may affect their motivation. Secondly, if the profits of the business units are poor then the unit managers may argue that it is due to arbitrariness in setting transfer prices from the headquarters.

### **5.4.2 Arbitration and Conflict Resolution**

There may be times when business units are not able to reach an agreement on transfer pricing. In such situations, business units should follow a set of procedures for arbitrating disputes relating to transfer price. The responsibility rests with the parent company. The job may be

assigned to a single executive who can talk to the business unit managers and arrive at an agreement over the price. Alternatively, a committee may be formed with the responsibilities to settle transfer price disputes to review sourcing charges and to change the transfer price rules whenever necessary.

**Notes**

Organizations can have a formal or informal system of arbitration to administer the transfer price mechanism and to resolve the conflict. In a formal system of arbitration, both the parties submit their arguments in writing to the arbitrary and the arbitrator reviews them and decides transfer price. In an informal system, all the presentations are oral.

Irrespective of the formality of arbitration and the process of conflict resolution, the goal is to make the transfer pricing system effective. There are four ways to resolve conflicts: forcing, smoothing, bargaining and problem-solving. The conflict resolutions mechanisms range from conflict avoidance through forcing and smoothening to conflict resolutions through bargaining and problem-solving.

#### **5.4.3 Product Classification**

Sourcing and transfer pricing are greatly affected by the number of intra-company transfers and the availability of markets and market prices. The larger the number of intra-company transfers and the less the availability of market prices, the greater the need for more formal transfer pricing rules. If market prices are readily available, the headquarters can play a vital role in making sourcing decisions. In some companies, products are classified into various categories to help in determining transfer prices.



*Example:* A company can divide its product portfolio into two classes before taking transfer pricing decisions. Class I products may include all those products whose transfer price the senior management at the headquarters would like to control. These would normally be large volume products; products for which no outside source exists and the products over which manufacturing is important, for quality or secrecy reasons.

Class II is all other products. In general, these are products that can be produced outside the company without any significant disruption to present operations and products of relatively small volume, produced with general purpose equipment.

#### **Self Assessment**

Multiple Choice Questions:

10. Which method of intercompany buying pricing is schematically represented as Transfer price=price paid in comparable uncontrolled sales +/- Adjustments
  - (a) Resale price method
  - (b) Cost plus method
  - (c) Comparable uncontrolled price method
  - (d) Comparable controlled price method
11. Transfer price = Applicable resale price - Appropriate mark up +/- adjustments? The above equation represents
  - (a) Resale price method
  - (b) Cost plus method
  - (c) Comparable uncontrolled price method
  - (d) None of the above

- Notes**
12. Which of the following equations represents the cost-plus method of transfer pricing?
    - (a) Transfer price = costs-approximate mark up +/-Adjustments
    - (b) Transfer price = Applicable resale price-Appropriate mark up +/- adjustments
    - (c) Transfer price = costs+ appropriate mark up +/-Adjustments
    - (d) Transfer price= costs- applicable resale price -appropriate mark up +/-Adjustments.
  13. Which of the following statement(s) is true?
    - (a) For the selling division, there is only one element of transfer price-fixed cost.
    - (b) For the buying division, the price charged by the selling division is variable cost.
    - (c) The selling division has three elements of cost-variable, fixed, and profit margin.
    - (d) both (b) and (c)
  14. Transfer pricing evolved
    - (a) To improve profit of a company
    - (b) To improve profit of a division of a company
    - (c) To cut necessary expenditure of the division of a company
    - (d) To estimate the financial needs of the company



*Case Study*

### **Divisions in a Company**

A large company is organized into several manufacturing divisions. The policy of the company is to allow the divisional Managers to choose their sources of supply and when buying from or selling to sister divisions, to negotiate the prices just as they will for outside purchases or sales.

Division X buys all of its requirements of its main raw material R from Division Y. The full manufacturing cost of R for Division Y is ₹ 88 per kg. at normal volume.

Till recently, Division Y was willing to supply R to Division X at a transfer price of ₹ 80 per kg. the incremental cost of R for Division Y is ₹ 76 per kg. Since Division Y is now operating at its full capacity, it is unable to meet the outside customer's demand for R at its market price of ₹100 per kg. Division Y therefore threatened to cut off supplies to Division X unless the latter agrees to pay the market price for R.

Division X is resisting the pressure because its budget based on the consumption of 1,00,000 kg. per month at a price of ₹ 80 per kg. is expected to yield a profit of ₹ 25,00,000 per month and so a price increase to ₹ 100 per kg. will bring the division X close to break even point.

Division X has even found an outside source for a substitute material at a price of ₹ 95 per kg. Although the substitute material is slightly different from R, it would meet the needs of division X. Alternatively, Division X is prepared to pay Division Y even the manufacturing cost of ₹ 88 per kg.

*Contd...*

<b>Questions:</b>	<b>Notes</b>
<ol style="list-style-type: none"><li>1. Using each of the transfer price of ₹ 80, ₹ 88, ₹ 95 and ₹ 100 show with supporting calculations, the financial results as projected by the:<ol style="list-style-type: none"><li>(a) Manager of division X</li><li>(b) Manager of Division Y</li><li>(c) Company</li></ol></li><li>2. Comment on the effect of each transfer price of the performance of the Managers of Division X and division Y.</li><li>3. If you were to make a decision in the matter without regard to the views of the individual divisional manager, where should Division X obtain its materials from and at what price?</li></ol>	

## 5.5 Summary

- Delegating authority depends on the ability to delegate responsibility for profits. Profit responsibility cannot be delegated unless two conditions exist: the delegate has all the relevant information needed to make optimum profit decisions and the delegatee's performance is measured on how well he or she has made cost/revenue trade-offs.
- Where segments of a company share responsibility for product development, manufacturing, and marketing, a transfer price system is required if these segments are to be delegated profit responsibility.
- This transfer price system must result in the two conditions described above. In complex organizations, devising a transfer price system that assures the necessary knowledge and motivation for optimum decision making can be difficult.
- Two decisions are involved in designing a transfer system. First, is the sourcing decision: should the company produce the product inside the company or purchase it from an outside vendor? Second is the transfer prices decisions: At what price should the product be transferred between profit centres?
- Ideally, the transfer price should approximate the normal outside market price, with adjustments for costs not incurred in intra-company transfers. Even when sourcing decisions are constrained, the market price is the best transfer price.
- If competitive prices are not available, transfer prices may be set on the basis of cost plus a profit, even though such transfer price may be complex to calculate and the results less satisfactory than a market-based price. Cost-based transfer prices can be made at standard cost plus profit margin, or by the use of the two-step pricing system.
- A method of negotiating transfer prices should be in place and there should be an arbitration mechanism for settling transfer price disputes, but these arrangements should not be so complicated that management devotes an undue amount of time to transfer pricing.

## 5.6 Keywords

**Capital Charge:** The rate used to calculate capital charge is set by corporate office

**Corporate Services:** Provision of a service by one part of an organization where that service had previously been found in more than one part of the organization

<b>Notes</b>	<p><b>Joint Initiatives (Internal):</b> Agreement between two or more organizations to set up and operate Shared Services</p> <p><b>Joint Venture:</b> Two companies coming together for a common purpose</p> <p><b>Lead Department:</b> Organization consolidating and centralizing a business service that will be shared by other organizations</p> <p><b>Market Prices:</b> Prices that are currently prevailing in the market</p> <p><b>Near Shore:</b> Work is carried out in a close location</p> <p><b>Off-Shore:</b> Work is carried out anywhere in the world that is not on-shore or near-shore</p> <p><b>On Shore Location:</b> Work is carried out in the same country but at a different location</p> <p><b>Transfer Pricing:</b> The monetary value at which transfer of goods and services from one profit centre to another profit centre</p> <p><b>Unitary Structure:</b> Single organization consolidating and centralizing a business service</p>
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## **5.7 Review Questions**

1. "Transfer pricing is confined to profit centers". Do you agree, why?
2. Analyse the three general methods for determining transfer price.
3. "Company transfer pricing policies must satisfy dual objectives", what are the objectives?
4. In transfer pricing, what is a common conflict between a division and the company as a whole?
5. What are the potential merits of a dual (two way) transfer pricing system? What are its limitations?
6. At the transfer point from division S to division P, a products variable cost is ₹ 1 and its market value is ₹ 2. Division P's variable cost of processing the product further is ₹ 1.25 and the selling price of the final product is ₹ 2.75.

Required:

- (a) Prepare a tabulation of the contribution margin per unit for division P's performance and overall performance under two alternatives (a) processing further and (b) selling to outsiders at the transfer point.
- (b) As division P's manager, what alternative would you use? Explain.
7. The Power Lite division of outside products manufactures batteries that it sells primarily to the Lantern division for inclusion with that divisions main product. Last year 20 percent of the batteries were sold to other companies at a price of ₹ 10 each. The remaining batteries went to the Lantern division. Cost data for the year are presented for Power Lite:

Units produced	5,00,000
Manufacturing cost (₹)	30,00,000
Marketing costs (₹)	1,00,000
Administrative costs (₹)	8,00,000

Required:

**Notes**

- (a) What should be transfer price of the batteries if the company uses?
1. Market price?
  2. Market price less marketing costs
  3. A transfer price that will yield a net income of 10 percent on sales for Power Lite?
  4. Product cost plus 40 percent
- (b) Prepare a schedule showing the power lites division's net income for each of the transfer pricing alternatives computed.
8. Paradise State Park has been plagued by vandalism recently. There are no funds available to hire permanent security officers to patrol the park. However, there is a general contingency fund with enough resources to hire temporary security people to patrol the park for a while until the vandalism controlled. Private security firms have bid for the job, with a low bid of ₹ 250 per patrol hour, including patrol vehicles. The State Police have heard of the situation and offered to patrol the park. IN return the park must pay the State Police out of the special contingency fund. State police cost and activity data for the year are as follows:
- |                              | Police hrs     | Cost           |
|------------------------------|----------------|----------------|
| State police in total        | 10,00,000 Hrs. | ₹ 15,00,00,000 |
| State police patrol division | 4,00,000 Hrs.  | 7,20,00,000    |
- Of the patrol division's cost, 60 percent is variable

Required:

- (a) Compute the transfer price for the state patrol service, if
1. Park officials can convince the state police that full cost for state police activities in general is the appropriate transfer price.
  2. State police can convince park officials that full cost for the patrol division is the appropriate transfer price.
  3. State Police can convince park officials that outside market price less a normal profit of 20 percent are the appropriate transfer price.
  4. Park officials can convince the state police that the appropriate transfer price is the variable part of the patrol division cost plus an incentive of 20 percent of the variable cost.
- (b) If the contingency fund can provide ₹ 2,70,000 for this project, how many patrol hours can the park purchase using each of the transfer prices computed above?

9. The G division of the GHI Corporation proposes the following investment in a new product line:

Investment in fixed assets	₹ 1,00,000
Annual profits before depreciation but after taxes	₹ 25,000
(i.e. annual cash flow)	
Life	5 years

**Notes**

The GHI Corporation used the time adjusted rate of return, with a cut off rate of 8 percent in evaluating its capital investment proposals. A ₹ 25,000 cash inflow for five years on an investment of ₹ 1,00,000 has a time adjusted return of 8 percent. Consequently the proposed investment is acceptable under the company's criterion. Assume that the project is approved and that the investment and profit were the same as estimated. Assets are included in the divisional investment base at the average of the beginning of the years net book value.

Required: Calculate the rate of return that is earned by the G division on the new investment for each year and the average rate for the five years, using straight line depreciation.

10. If assets are included in the investment base at their original cost, then the business unit manager is motivated to get rid of them—even if they have some usefulness—because of the business unit's investment base is reduced by the full cost of the asset. Why, what are the reasons?
11. Business unit managers are able to influence the level of receivables, indirectly by increasing sales and directly by establishing credit terms (by approving individual credit accounts and credit limits) and by their initiative in collecting overdue amounts. Discuss the implications.
12. Under what circumstances the business unit manager may be reluctant to purchase new machinery, though it complies with the corporate guidelines on capital expenditure and it is necessary from company's long term requirement. Explain this with an example.

**Answers: Self Assessment**

- |                            |         |
|----------------------------|---------|
| 1. (c)                     | 2. (a)  |
| 3. (a), (b), (d), (g), (h) | 4. (b)  |
| 5. (a)                     | 6. (a)  |
| 7. (d)                     | 8. (a)  |
| 9. (d)                     | 10. (c) |
| 11. (a)                    | 12. (c) |
| 13. (d)                    | 14. (b) |

**5.8 Further Readings**



Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Macariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanavel, P, "Management Control System", Himalaya Publishing House.



- Online links*
- [www.iimcal.ac.in/Community/Finclub/dhan/dhan5/art54-tp.pdf](http://www.iimcal.ac.in/Community/Finclub/dhan/dhan5/art54-tp.pdf)
  - [www.indlawnews.com/display.aspx?4423](http://www.indlawnews.com/display.aspx?4423)
  - [www.pwc.com/gx/en/tax/transfer-pricing/index.jhtml](http://www.pwc.com/gx/en/tax/transfer-pricing/index.jhtml)
  - [www.transferpricing-india.com/methods\\_for\\_global\\_transactions.htm](http://www.transferpricing-india.com/methods_for_global_transactions.htm)

**Notes**

Notes

## Unit 6: Strategic Planning for Management Control

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### **Objectives**

After studying this unit, you will be able to:

- Discuss the evolution of strategic planning
- Explain the analyzing of proposed new programs
- Analyze the ongoing programs

### **Introduction**

Most companies' managers spend considerable time thinking about the future, which results in an informal understanding of the future direction the entity is going, or it may be a formal statement of specific plans about how to go there. Such a formal statement of plans is called strategic planning (also called long-term planning and programming). Strategic planning is the process of deciding on the programmes that the organization will undertake and on the approximate amount of resources that will be allocated to each program over the next several years.

### **Relation to Strategy Formulation**

Strategy formulation is the process of deciding on new strategies, whereas strategic planning is the process of deciding how to implement the strategies. In the strategy formulation process, management arrives at the goals of the organizations and creates the main strategies for achieving the goals. The strategic planning process then takes the goals and strategies as given and develops programs that will carry out the goals and strategies efficiently and effectively. For example, the

decision by an individual goods manufacturer to diversify into consumer goods is a strategy formulation, a strategic decision after which a lot of implementation issues have to be sorted out such as whether to diversify through acquisition or through organic growth, what product lines to go for, whether to make or buy, which marketing channels to use. The document that describes how the strategic decision is to be implemented is the strategic plan.

**Notes**

In practice, there is considerable amount of overlap between strategy formulation and strategic planning. Studies made during strategic planning process may desire changing of goals or strategies. But strategy formulation usually includes a preliminary consideration of the programs that will be adopted as means of achieving the goals.

Strategic planning is systematic; there is an annual strategy planning process with prescribed procedures and timetables. Strategy formulation is unsystematic. Strategies are re-examined in response to perceived opportunities or threats. Thus, ideally, a possible strategic initiative may surface at any time from anyone in the organisation. If found to be worth pursuing, it should be analyzed immediately without waiting upon a prescribed timetable. Once a strategy is accepted, the planning for it follows in a systematic way.

## **6.1 Evolution of Strategic Planning**

Fifty years ago, management did give some thought to strategic planning but not in a systematic and co-ordinated way.

A few companies started formal strategic planning in the late 1950s, but most early efforts were failures, since it were minor adaptations of the existing budget preparation systems, the required data were much more detailed than was appropriate; staff people rather than line staff did most of the work, participants spent more time in filling the forms rather than deep thinking about alternatives and selecting the best options.

Currently, many organizations appreciate the advantages of making a plan for the next 3 to 5 years. The practice of starting this plan in a formula document or model is widely, but by no means, universally accepted.

### **6.1.1 Benefits and Limitations of Strategic Planning**

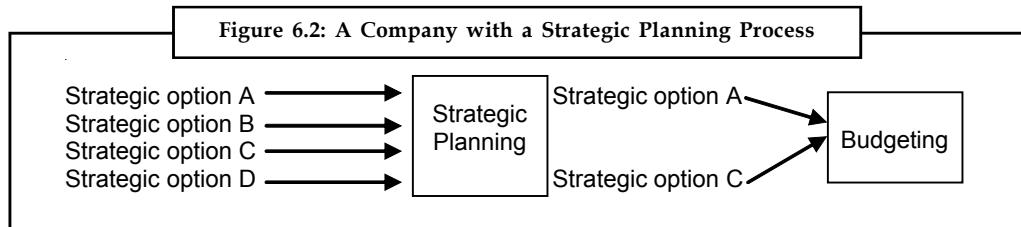
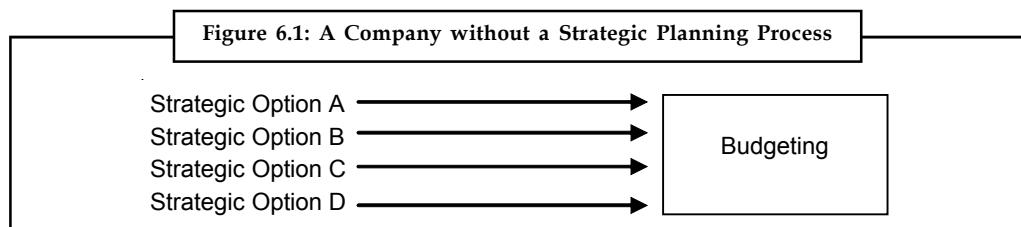
#### **Benefits**

1. *A framework for developing the operating budget:* An operating budget involves resource commitments for the next year; it is essential that such resource commitments are made with a clear idea of where the organisation is heading over the next several years. A strategic plan provides that broader framework. Thus, an important benefit of preparing a strategic plan is that it facilitates the formation of an effective operating budget. [Figure 6.1 shows how the strategic planning process, narrows the range of options such that planners can make intelligent resource allocation decisions during the budgeting process. The strategic plan helps the organisation understand the implications of strategic decisions for action plans in the short-term.]

As provided in Figure 6.1, a company without a strategic planning process is required to consider a number of strategic issues during the budgeting stage. This might lead to information overload, inadequate consideration of some strategic alternatives, or neglect of some choices altogether – a dysfunctional environment that may affect the quality of resources, allocations and decisions. An important benefit of strategic planning is to facilitate optimal resource allocation decisions in the support of key strategic options. Figure 6.2

### Notes

shows how strategic planning process can help narrow the range of strategic options such that intelligent resource allocation decisions can be made during the budgeting process.



2. **A management development tool:** Formal strategic planning is an excellent management education and training tool. It provides the managers to think about strategies and their implementations.
3. **A mechanism to force managers to think long-term:** Managers are more concerned about managing the present, day-to-day problems than thinking about future plans. Formal strategic planning forces managers to make time for important long-term issues.
4. **Help in aligning managers with corporate strategies:** The debates, discussions and negotiations that take place during the planning process help clarify corporate strategies, units and align managers with such strategies and show the implications of corporate strategies for individual managers.
5. **A framework for short run actions:** The strategic plan shows the implications of programming decisions for action plans in the short run. Programme decisions are made one at a time and the strategic plan brings them altogether. Preparing the strategic plan may reveal that individual decisions do not add up to a satisfactory whole. Planned new investments may require more funds in certain years than the company can obtain in those years, planned changes in the direct programs may require changes in the size of support programmes (e.g. research and development, administrative) that were not taken into account when these changes were considered separately.

### Limitations

1. **Strategic planning could end up becoming a form-filling, bureaucratic exercise devoid of strategic planning:** In order to avoid this situation, it is necessary for the organisation to review periodically whether fresh ideas are coming as a result of strategic planning process.
2. **Creation of large strategic planning department and delegating the preparation strategic planning to the staff department:** Strategic planning is a line management function and the role of the staff in the strategic planning department should be kept to minimum and their role should be of a catalyst, an educator and a facilitator of the planning process.
3. **Strategic planning is time consuming and expensive:** Lots of time is devoted by the senior management and managers at other levels in the organisation. A form process is not worthwhile, if the senior management does not desire, organisation small and relatively stable, and in organizations where reliable estimates about the future cannot be made.

Characteristics of the organisation where a formal programme is desirable:

Notes

1. Top management is convinced that programming is important; otherwise, programming is likely to be a staff exercise that has little impact on the actual decision making.
2. It is relatively large and complex. In smaller simple organizations, an informal understanding of the organizations and future directions is adequate for making decisions about resource allocation, which is the principal purpose of preparing a strategic plan.
3. Considerable uncertainty about the future exists, but the organisation has the flexibility to adjust to changed circumstances.

### **Self Assessment**

Fill in the blanks:

1. In the ..... process, management arrives at the goals of the organizations and creates the main strategies for achieving the goals.
2. ..... is systematic; there is an annual strategy planning process with prescribed procedures and timetables.
3. An important benefit of preparing a strategic plan is that it facilitates the formation of an effective .....

## **6.2 Analyzing Proposed New Programs**

Ideas for new programs can originate anywhere in the organisation with the chief executive, with the headquarters planning staff or in the various parts of the operating organisation. Some responsibility centres are more likely source than others.



*Example:* R&D department is expected to generate ideas for new products or processes, the marketing department, marketing innovation and the product engineering department for new equipment and manufacturing method.

Proposals for programs are essentially either reactive or proactive, that is, they arise either as the reaction to a perceived threat such as rumours of the introduction of a new product by the competitor or they represent an initiative design to capitalize in a newly perceived opportunity.

Since the company's success depends on its ability to find out and implement new programs and because the ideas may come from a wide variety of sources, it is necessary that an atmosphere is created that such ideas come to light and that they receive appropriate management attention. A highly structured formal system may create the wrong atmosphere for this purpose and therefore, it is important that the system should be flexible enough and reactive so that good ideas may not be killed off at the initial stage before they come to the attention of the decision-makers.

It is also important that, wherever possible, the adoption of a new program be viewed not single all-or-nothing decision but rather a series of decisions, each involving a small step in testing and developing the proposed program. Full implementation and its consequent significant investment should be decided upon if, but only if, the test indicates that the proposal has a good chance of success. Most new programs involve many successive decisions: agreement that the initial idea for a product is worth pursuing; then examining its technical feasibility in a laboratory; then examining production problems and cost considerations in a pilot plant; then testing consumer acceptance in test markets and only then making a major commitment to full production and marketing. The system must provide for these successive steps and for a thorough evaluation of the results of each step as a basis for making the decision on the next step.

**Notes**

**Capital Investment Analysis:** Most proposals require significant amounts of new capital and techniques for analyzing proposals such as NPV, IRR are used. Net present value is the excess of the present value of estimates cash inflows over the amount of investment required, and the internal rate of return implicit in the relationship between inflows and outflows. An important point is that these techniques are used in only about half the situations in which, conceptionally, they are applicable. There are at least four reasons for not using present value techniques in analyzing all proposals.

1. The proposal may be so attractive that a calculation of its net present value is unnecessary, e.g. a newly developed machine that reduces costs substantially.
2. The estimates involved in the proposal are so uncertain that making present value calculations are not worth the effort. Since one can't draw a reliable conclusion from unreliable data. For e.g., the estimates of sales volume of new products for which no good market data exist. In these situations, payback method is used.
3. The rationale for the proposal is something other than increased profitability e.g., investments made to improve employee morale, the company's image or safety.
4. The proposed investment is necessary to comply with guidelines of 'Regulatory Authorities', for example: environmental laws.



*Did u know?* The Management Control System provides an orderly way of deciding on proposals that cannot be analyzed on quantitative techniques.

The following are some considerations that are useful in implementing capital expenditure evaluation systems.

1. **Rules:** Companies, usually, have rules and procedures for the approval that can be approved by the plant manager, subject to annual budgetary amount and larger amounts go to business unit heads, CEO or to the board of directors.  
The rules also contain guidelines for preparing proposals and general guidelines for approving them. For example: small cost saving proposals may require a maximum payback of two or three years. For other proposals, a minimum required earnings rate to be used either in NPV or IRR analysis same for all proposals or different rates for different risk characteristics. Proposals for additional working capital may have a lower rate than for fixed assets.
2. **Avoiding manipulation:** To avoid manipulation of estimates by sponsors, the project analyst should have some great feeling. The reputation of project sponsors with excellent track record can provide a safeguard.
3. **Models:** In addition to the basic capital budgeting model, there are specialized techniques, such as: risk analysis, simulation, scenario, planning, and game theory, option processing models, contingent claim analysis and decision trace analysis. The planning staff should require their use in situations.
4. **Organization for analysis:** A team may be formed to evaluate large and important proposals and the process may require a year or more. Even for smaller proposals, there is usually considerable discussion between the person who is sponsoring the proposal and the headquarters staff. For an important proposal, it has to go through a large number of line and staff executives, before it is submitted to the CEO. The CEO may retain the proposals for the further analysis, before final decision is taken.

There is no set timetable for analyzing investment proposal. Analysis is done after the receipts of proposals, as people are available. Approved projects are collected during the year for inclusion in the capital budget. The capital budget contains the authorized capital expenditure for the budget year and if additional amounts are approved, cash plans must be revised.

**Notes**

## Self Assessment

Fill in the blanks:

4. .... for programs are essentially either reactive or proactive.
5. A highly structured ..... system may create the wrong atmosphere.

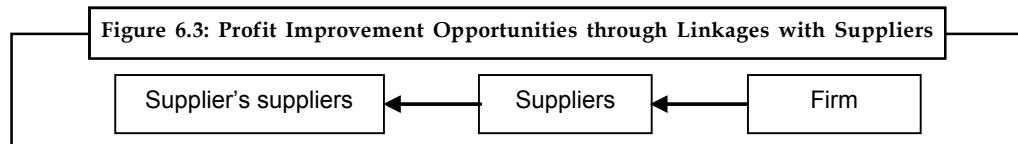
## 6.3 Analyzing Ongoing Programs

In addition to new programs, many companies have systematic ways of analyzing ongoing programmes. Several analytical techniques can aid in the process, two such tools are value chain analysis and activity based costing.

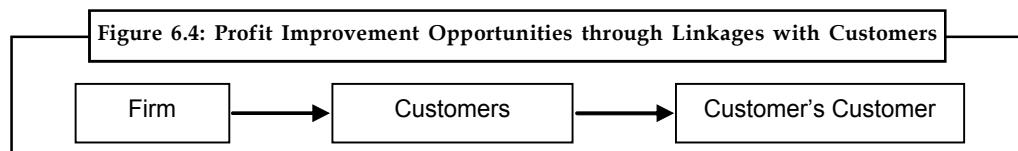
### 6.3.1 Value Chain Analysis

The value chain for any firm in any business is the linked set of value creating activities to produce a product from basic raw materials source for component suppliers to the ultimate end-use produce delivered into the final consumers' hands. Each firm must be understood in the context of the overall chain of value creating activities of which it is only a part. From a strategic planning perspective, the value chain concept highlights three potential useful areas.

1. **Linkages with suppliers:** The linkages with suppliers should be managed so that both the firm and its supplier may benefit in lowering costs, increasing value or both. This is provided in Figure 6.3:



2. **Linkages with customers:** As shown in Figure 6.4, customer linkages can be just as important as supplier linkages since it becomes mutually beneficial.

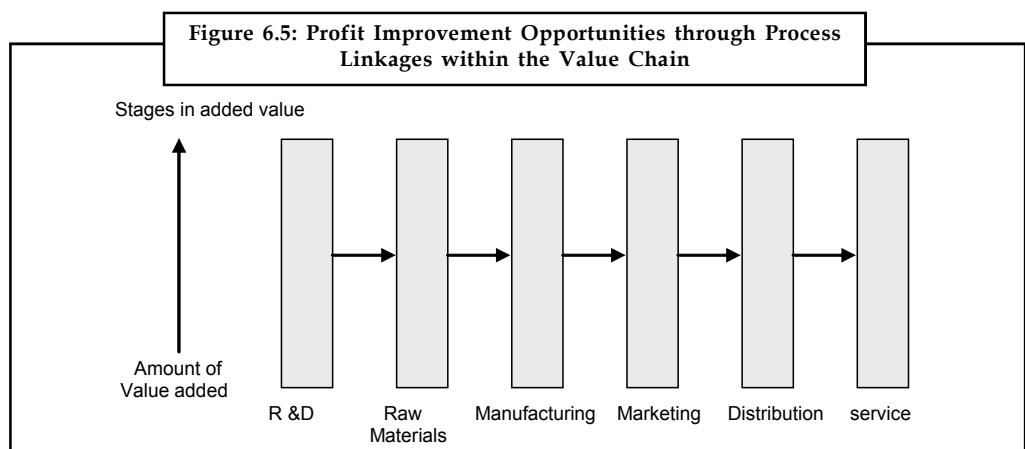


3. **Process linkages within the value chain of the firm:** Value chain analysis explicitly recognizes the fact that the individual value activities within a firm are not independent but rather are interdependent. The company might want to analyze the process linkages within the value chain, seeking to improve their efficiency.



*Notes* Reducing the number of separate parts and increasing their ease of manufacture might increase efficiency of the design portion of the value chain.

<b>Notes</b>	<p>Efficiency of the portion that precedes production (inward portion) might be improved by reducing the number of vendors by having a computer system place orders automatically by limiting deliveries to "just in time" amounts (which reduces inventories), and by holding vendors responsible for quality and which reduces/estimates inspection costs.</p> <p>The efficiency of the production portion might be improved by increased automation and perhaps by using robots, by rearranging machines into "cells", each of which performs a series of related production steps and by better production control systems.</p> <p>The efficiency of the outward portion (i.e. the portion from factory door to receipt by customer) might be improved by having customers place orders electronically, by changing the locations of warehouses, by changing the channels of distribution and placing more or less emphasis on distributors and wholesalers; by improving the efficiency of warehouse operations; and by changing the mix between company operated trucks and transportation by outside agencies.</p>
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### 6.3.2 Activity Based Costing

Increased computerization and automation in factories have led to important changes in systems for collecting and using cost information. Some fifty or sixty years back, most companies allocated overhead costs to products by means of plant wide overhead rate based on direct labour hours or direct labour cost in rupees. Today, an increasing number of companies collect costs for:

1. Material-related costs (such as transportation, storage, and purchase department costs) separately from other manufacturing costs.
2. Manufacturing costs for individual departments, individual machines or individual "cells" which consist of group of machines that perform a series of related operations on a product. In these cost centres, direct labour costs may be combined with other costs, denoting conversion cost i.e., the labour and factory overhead cost of converting raw materials and parts into finished products.
3. The newer systems assign R&D, general, administrative and marketing costs to products.
4. The newer system also uses multiple allocation bases. The word activity is often used instead of cost centre and cost driver used instead of the basis of allocation and the cost system is called Activity Based Cost system (ABC).
5. The basis of allocation or cost driver for each of the cost centers reflects the cause of cost incurrence, that is, the element that explains why the amount of cost incurred in the cost centre or activity varies.

**Notes**

 *Example:* In procurement, the cost driver may be the number of orders placed, for internal transportation, the number of parts moved, for product design, the number of the different parts in the product and the production control, the number of set ups.



*Notes* In earlier days, factories tended to produce different products. Cost was labour-dominated (high labour cost relative to overhead) and products tended to differ less in the amount of support services they consumed. Thus, the activity basis for overhead allocation was not likely to result in product costs much different from a simple volume - driver basis tied to labour cost.

Today, labour cost in most companies is not only less important but is viewed less and less as a cost to be varied when production volume varies. Indirect cost accounts for dominant part of cost in many companies. Advocates of ABC maintain that a meaningful assessment of full cost today must involve assigning overhead in proportion to the activities that generate it in the long run.

### **6.3.3 Use of ABC Information**

ABC is a strategic planning tool. ABC may provide useful insights.



*Example:* It may show that complex products with many separate parts have higher design and production costs than simpler products; that products with less volume have higher unit costs than high volume products; that products with many set ups or many engineering change orders have higher unit costs than other products; and that products with a short life cycle have higher unit cost than other costs. Information on the magnitudes of these differences may lead to changes in policies relating to full line versus focused product line, product pricing policies, make or buy decisions, product mix decisions, policies on adding or deleting products, elimination of non value added activities and to an emphasis on better factory layouts and simplicity in product design. Example: Hewlett Packard's successful products, new models of HP 3000 and HP 9000 mid range computers, benefited for better cost information. When ABC showed that testing, new design and parts were extremely expensive, engineers changed their plans to favour components that required less testing, thus lowering costs. Other companies have realized significant cost savings as a result of reducing complexity.

### **Self Assessment**

Fill in the blanks:

6. The ..... with suppliers should be managed so that both the firm and its supplier may benefit in lowering costs, increasing value or both.
7. Reducing the number of separate parts and increasing their ease of manufacture might increase efficiency of the design portion of the .....

### **6.4 Strategic Planning Process**

In a company that operates on a calendar year basis, the programming process is completed just prior to the preparation of the annual budget. The process involves the following steps:

- Notes**
1. ***Renewing and updating the strategic plan from last year:*** Actual experience for the first few months of the current year is already reflected in the accounting reports and these are extrapolated for the current best estimate of the year as a whole. If the computer programme is sufficiently flexible, it can extend the impact of the current forces to years beyond the current year, if not, rough estimates are made manually. The implications of new plans decisions on revenues, expenses, capital expenses and cash flows are incorporated.
  2. ***Deciding on assumptions and guidelines:*** The updated strategic plan includes broad assumptions as the growth in gross national product, cyclical movements, the rate of general inflation, labour rates, prices of important raw materials, interest rates, selling prices, market conditions, including the actions of the competitors and the impact of government legislations in each of the countries in which the company operates. These assumptions are re-examined and if necessary, changed to incorporate the latest information.

The updated strategic plan contains the implications on revenues, expenses and cash flows of the existing operating facilities and changes in these facilities due to opening new plants expanding existing plans, closing plants and relocating facilities. It reflects the business unit "charters", that is, the product lines that are permitted to manufacture or to sell or both. These conditions are examined to see that they are currently valid and the amounts are extended for another year.

The resulting update is not done in great detail. A rough approximation is adequate as a basis for senior management decisions about objectives that are to be attained in the program years and about the key guidelines that are to be observed in planning how to attain these objectives.
  3. ***First iteration of the strategic plan:*** The business units and other operating units prepare their "first cut" of the strategic plan. It may include different operating plans than those included in the current plan such as change in marketing tactics; these are supported by reasons.

The completed strategic plan consists of income statements, of inventory, accounts receivable and other key balance sheet items, of the number of employees, of quantitative information about sales and production, of expenditure for plant and other capital acquisitions, of any other unusual cash flows; and of a narrative explanation and justification.
  4. ***Analysis:*** The analysis is done both by the planning staff and by the marketing, production and other functional executives at headquarters through discussions.

In many cases, the sum of the business unit plan reveals a planning gap i.e., the sum of the individual plans does not add up to the attainment of the corporate objectives. There are three ways to close a planning gap: (a) to find opportunities for improvements in the business unit plan, (b) to make acquisitions or (c) to revise the corporate objective. Senior management usually focuses on the first option.

Comparisons with past performance, with the performance of other companies or with standard costs for certain types of activities may indicate opportunities for improvement.
  5. ***Second iteration of the strategic plan:*** Analysis of the first submission may lead to revision of the plan of certain business units, but it may also lead to change in the assumptions and guidelines that affect all business units.



*Example:* The aggregation of all plans may indicate cash drain because of increasing inventories, and capital expenses is more than the company can safely tolerate, if so, there may be a requirement for postponement of expenditures throughout the organization. These decisions lead to a revision of the plan.

6. **Final review and approval:** The revised plan usually is discussed at length in a meeting of senior corporate officials. Final approval comes from the Chief Executive Officer. The approval should come prior to the beginning of the budget preparation process, because the strategic plan is an important input to that process.
7. **Tools used:** Tools used for analysing and deciding on new programme are NPV, IRR, specialized techniques (e.g: Risk analysis, sensitivity analysis, game theory, optimum pricing models, contingent claim analysis, decision three analysis, etc.) and internal guidelines and procedures for submission of capital expenditure programs. For ongoing programs, analytical tools can be identified as value chain analysis and zero base review.

**Notes**

Analytical techniques that aid programming process can be identified as computer model, activity based costing, variable cost analysis and productivity gain etc.

## **Self Assessment**

Fill in the blanks:

8. The analysis is done both by the ..... and by the marketing, production and other functional executives at headquarters through discussions.
9. Comparisons with ....., with the performance of other companies or with standard costs for certain types of activities may indicate opportunities for improvement.



*Case Study*

### **MTV's Growth Strategy**

#### **Introduction**

More than one billion people around the world see MTV every day, according to its American parent Viacom. Although there are global stars, like Madonna and Eminem, MTV mainly broadcasts through 40 national or regional music channels, each with a distinctive chart sound. This case explores the reasons why MTV's strategy is more local than global.

#### **Programme Content**

When MTV began in 1981, it broadcast largely to its American home audience and its programme content was primarily music videos. By 2005, the US was still MTV's largest and most profitable market. But the programming had moved from simply music to include reality television programmes like the activities of The Osbournes and the baiting of celebrities on Punk'd. Nevertheless, music was still the central theme and the MTV Annual Music Awards were still able to cause controversy.

MTV pioneered the reality television format in 1992 with a programme called The Real World. It was about a group of young people living in an apartment in New York. It was originally planned to use actors but the company did not have sufficient funds, so it observed real people at zero cost instead. The company had the same low-budget, free-wheeling culture in 2005 - except for the vast sum it paid the Osbournes to have television cameras follow them for months. This was all part of the way of staying creative and in touch with its young target audience.

MTV was a major part of the global media company Viacom and it was under pressure to deliver profits. Tom Freston, 45-year-old chief executive of MTV Networks, was aware of

*Contd...*

**Notes**

the need to keep MTV away from the pressures of the large, global corporation: MTV's European headquarters co-ordinates individual country strategies but allows considerable flexibility within the overall station's vision and purpose.

**Growth Strategy**

As the US has seen the launch of more TV stations and advertising begin to slow, MTV has been seeking growth from its international interests. By 2005, MTV International accounted for 80% of viewers but only 15% of revenues. But international activity was the future, with the company launching services to high-growth markets like India and China. In 2005, MTV launched its first African channel, MTV Base. The main task of Bill Roedy, president of MTV International, was to turn the high growth into a profitable business. "Africa we expect to be a big contributor. People look at Africa and see problems, but we also have to look at the positives. Its GDP growth is the second highest in the world behind growth in East Asia." China and India also represented major opportunities. "The epicenter is shifting to the Far East and India," commented Roedy. "They are amazing markets but it's important not to get too euphoric about the numbers."

**Competition**

Music downloading over the internet was becoming a major threat: Apple had led the way with its legal music site to millions of customers. In addition, the technology of broadband telecommunications would extend downloading to videos and mobile phones. MTV therefore needed to offer more than just music videos. In addition, it needed to take into account new ways of delivering its product. Japanese customers already accessed MTV more frequently by mobile telephone than by TV channel. Equally, in Korea, most homes had broadband and could download videos quickly and legally.

As a result, MTV was continuing to change its programme content with non-music offerings like Jackass and Dirty Sanchez and it was making all this available through the new media channels. But it faced the problem that much of this material was mainly American in humour and style. Its target audiences might be young and international, but they still mainly listened to national and ethnic recording artists - hence the need for local material alongside the global MTV brand name.

**Questions**

1. What are the benefits of operating a global media strategy and what are the difficulties?
2. What are the market trends that will make it more difficult for MTV in the future?
3. Should MTV become more global with more programmes like Jackass, or more local with little global content?

## **6.5 Summary**

- Strategy formulation is the process of deciding on new strategies, whereas strategic planning is the process of deciding how to implement the strategies.
- Top management is convinced that programming is important; otherwise, programming is likely to be a staff exercise that has little impact on the actual decision making.
- Ideas for new programs can originate anywhere in the organisation with the chief executive, with the headquarters planning staff or in the various parts of the operating organisation.

- The value chain for any firm in any business is the linked set of value creating activities to produce a product from basic raw materials source for component suppliers to the ultimate end-use produce delivered into the final consumers' hands.

**Notes**

## **6.6 Keywords**

**Formal Strategic Planning:** Formal strategic planning is an excellent management education and training tool. It provides the managers to think about strategies and their implementations.

**Strategy Formulation:** Strategy formulation is the process of deciding on new strategies, whereas strategic planning is the process of deciding how to implement the strategies.

**Value Chain Analysis:** The value chain for any firm in any business is the linked set of value creating activities to produce a product from basic raw materials source for component suppliers to the ultimate end-use produce delivered into the final consumers' hands.

## **6.7 Review Questions**

1. What is the relation between goals, strategies and long-range planning?
2. Trace the evolution of long-range planning.
3. What is the structure and content of long-range plan?
4. What are the benefits and limitations of Long-Range Planning/Strategic Planning?
5. In which type of organization is formal long-range planning required? In a stable organization, do you require formal programming/long-range planning?
6. "In a company that operates on a calendar-year basis, the programming process is completed just prior to the preparation of the annual budget." Can you describe the process?
7. What is a planning gap? How do you close a planning gap?
8. What are the different ways of analysing ongoing programmes/long-range plans?
9. "From strategic planning perspective, the value change concept highlights three potential areas." Describe these areas and state methods for improvement.
10. How is activity-based costing a strategic planning tool?
11. What insights of the business does the "Value chain" provide?

## **Answers: Self Assessment**

- |                         |                       |
|-------------------------|-----------------------|
| 1. Strategy formulation | 2. Strategic planning |
| 3. Operating budget     | 4. Proposals          |
| 5. Formal               | 6. Linkages           |
| 7. Value chain          | 8. Planning staff     |
| 9. Past performance     |                       |

Notes

## 6.8 Further Readings



Books

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanavel, P, "Management Control System", Himalaya Publishing House.



Online links

[books.google.co.in/books?isbn=0669103152..](http://books.google.co.in/books?isbn=0669103152..)

[http://books.google.com/books/about/Strategic\\_planning\\_and\\_management\\_contro.html?id=k6fv8KBer1sC](http://books.google.com/books/about/Strategic_planning_and_management_contro.html?id=k6fv8KBer1sC)

[www.a2z-technology.com/courses%5C115.asp?sj=115](http://www.a2z-technology.com/courses%5C115.asp?sj=115)

## Unit 7: Budgeting: Tool for Management Control

Notes

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### Objectives

After studying this unit, you will be able to:

- Discuss the relation to strategic planning
- Explain the operating budget categories
- Describe the budget preparation process and budget revisions
- Explain budget ratios
- Discuss management control of operations
- Explain the management action

**Notes**

## **Introduction**

Budgets are an important tool for effective short-term planning and control in an organisation. An operating budget usually covers one year and states the revenues and expenses planned for that year. It has the following characteristics:

1. A budget estimates the profit potential of a business unit.
2. It is stated in monetary terms although the monetary amounts may be supported by non-monetary amounts (e.g. units sold or produced).
3. It generally covers the period of one year but quarterly breakups, especially those that are affected by seasonal factors.
4. It is a management commitment; managers agree to accept responsibility for attaining the budgeted objectives.
5. The budget proposal is reviewed and approved by an authority higher than the budgetee and ultimately, by the Chief Executive Officer (CEO).
6. Once approved, the budget can be changed under special conditions.
7. Periodically, actual financial performance is compared to budget and variances are analysed and explained.

The process of preparing budget should be distinguished from (a) strategic planning and (b) forecasting.

### **7.1 Relation to Strategic Planning**

Strategic planning is the process of deciding on the nature and size of several programmes that are to be undertaken in implementing an organisation's strategies. The difference between strategic planning and budgeting are as follows:

1. Both strategic planning and budgeting are planning activities in the two processes. The budgeting process focuses on a single year, whereas, strategic planning focuses on the activities that extend over a period of several years.
2. Strategic planning precedes budgeting and provides the framework within which the annual budget is developed.
3. Strategic plans are structured by product lines or programmes while the budget is structured by responsibility centers. This re-arrangement of programs - so it corresponds to the responsibility centers charged with executing it - it is necessary because the budget will be used to influence a manager's performance before the fact and to appraise performance after that.

#### **7.1.1 Contrast with Forecasting**

1. A budget is a management plan, with the implicit assumption that positive steps will be taken by the budgetee - the manager who prepares the budget to make actual events correspond to the plan. A forecast is a production of what will likely happen carrying no implication that the forecasts will attempt to make actual, correspond to the forecast.
2. A budget is stated in monetary terms whereas a forecast may or may not be stated in monetary terms.
3. A budget usually covers one year, whereas, forecast can be for any time period.

- |  |              |
|--|--------------|
| <ol style="list-style-type: none"><li>4. A budget is approved by the higher authority, whereas, forecasts are not usually approved by higher authorities.</li><li>5. Once approved, the budget can be changed only under specified conditions. A forecast is updated as soon as new information indicates change in conditions.</li><li>6. In case of budgeting, actual financial performance is compared to budget and variance analysed and explained.</li></ol> | <b>Notes</b> |
|--|--------------|



*Caution* Variances from forecasts are not analysed formally or periodically.

### Examples of a Forecast

This is one made by the treasurer's office to help in cash planning. Such a forecast includes estimates of revenues and expenses and other items that affect cash flows. The treasurer has of course no responsibilities for making the actual sales, or other items to conform to forecast. The cash forecast is not cleared with top management, it may change weekly or even daily, without approval from higher authority and usually, the variances between actual and forecasts are not systematically analysed.

From the management's point of view, a financial forecast is exclusively, a planning tool, whereas a budget is both a planning and a control tool. All budgets include the elements of forecasting since the budgetee cannot be held responsible for certain events that affect their ability to meet budgeted objectives.

### Self Assessment

Fill in the blanks:

1. ..... is the process of deciding on the nature and size of several programmes that are to be undertaken in implementing an organisation's strategies.
2. A ..... is stated in monetary terms whereas a forecast may or may not be stated in monetary terms.

## **7.2 Uses of a Budget**

Operating budget has four principal purposes:

1. ***To fine-tune the strategic plan:*** Strategic plan is prepared early in the year and developed on the basis of the best information available at that time; its preparation involves relatively few managers and it is stated in fairly broad terms. The budget is completed just prior to the beginning of the budget year, provides an opportunity to use the latest available information and is based on the judgement of managers at all levels throughout the organisation. The 'first draft' at the budget reveals that the overall performance of the organisation or a business unit within an organisation may not be satisfactory. Budget preparation would give an opportunity to improve the performance through commitment made by respective managers.
2. ***To help co-ordinate the activities of the several parts of the organisation:*** Every responsibility centre manager in the organisation participates in the preparation of the budget. Then, when the budget staff assembles the pieces into overall plan inconsistencies may show up.

**Notes**



*Example:* Plans of the production responsibility centres are not consistent with the planned sales volume in total or in certain product lines.

Further, within the production organisation, plans for the shipment of finished products may be inconsistent with the plans of plants or departments within plants to provide components for these products.

3. To assign responsibility to managers, to authorize the amounts they are sanctioned to spend and to inform them of the performance that is expected of them: The approved budget should make clear what each manager is responsible for. The budget also authorizes responsibility centre managers to spend the specified amount of money for certain specified purposes without seeking the approval of the higher authority.
4. To obtain a commitment that is a basis for evaluating a manager's actual performance: the budget represents a commitment by the budgetee to his superior and therefore a benchmark against which actual performance can be judged. The budget assigns responsibility to each responsibility centre in the organisation. At the top level, the budget summary assigns responsibility to individual profit centers (business units) within profit centre, the budget assigns responsibility to functional areas (such as marketing). Within the functional areas of marketing, the budget assigns responsibility to individual responsibility centres such as Regional Sales Office.

### 7.2.1 Contents of an Operating Budget

**Figure 7.1: Contents of an Operating Budget**

Strategic Plan	Operating Budget	Capital Budget
Revenue and expense for each major programme	For organisation as a whole and for each business unit	Each major capital project listed separately
Not necessarily by responsibility centres	Classified by responsibility centres	
Not as much detail as operating budget	Typically includes: Revenues Production cost and Cost of sales Marketing expenses Logistic expenses General & Administrative Research & Development Income tax Net Income Expenses may be: Flexible, Discretionary or Committed For one year, divided into months or quarters Total reconciles to strategic plan (unless revised)	
Cash Forecast Budgeted Balance Sheet 		

Figure 7.1 shows the content of a typical operating budget and distinguishes from other planning documents: the strategic plan, the capital budget, the cash budget and the budgeted balance sheets. The amounts are the planned rupee amounts for the year together with quantitative amounts such as: head counts (i.e., no. of employees) and sales in units.

**Notes**

Typical operating budget contains the following:

1. For organization as a whole and for each business unit
2. Classified by responsibility centres
3. Typically includes:
  - (i) References
  - (ii) Production cost and cost of sales
  - (iii) Marketing expenses
  - (iv) Logistic expenses (it includes order processing, transporting from the factory to the customer, warehousing and other packing, and construction of accounts receivable)
  - (v) General and administrative
  - (vi) Research and development
  - (vii) Net Income
4. Expenses may be flexible (i.e., to change with changes in either sales revenue or production volume), discretionary or committed
5. For one year divided into months or quarters
6. Total reconciles to strategic plan (unless revised)



*Did u know?*    **Other Budgets**

Consist of capital budget, a budgeted balance sheet and a budgeted cash flow statement. Some companies prepare a statement of non-financial objectives.

### **Self Assessment**

Fill in the blanks:

3. .... preparation would give an opportunity to improve the performance through commitment made by respective managers.
4. The budget is completed just prior to the ..... of the budget year.

### **7.3 Operating Budget Categories**

#### **Revenue Budgets**

A revenue budget is the starting point for budgeting exercise and consists of unit sales projection multiplied by expected selling price. The revenue budget is the most critical but also subject to greatest uncertainty. The degree of uncertainty differs among companies and within the same company; the degree is different at different times. Companies with large backlogs or companies whose sales volumes are constrained due to production capacity, the uncertainty element is

<b>Notes</b>	much less. Further, revenue budget is based on forecast of some conditions for which the sales manager cannot be held responsible. Nevertheless, effective advertising, good service, good quality and well-trained sales people influence the sales volume for which sales managers has control.
--------------	---

### **Budgeted Production Cost and Cost of Sales**

There are two ways of doing:

1. Direct material cost is calculated for Bills of Materials and Part Lists which provides about quantities and types of material used to build a unit of product, and material price information from the purchase department. Direct labour is calculated from operation sheets from the individual engineering department, which provides information on productive operations and estimated labour time on all products; and wage rate information from the payroll department.
2. The standard material and labour costs of planned volume level of standard mix of products are calculated. This method is adopted where the actual mix of sales are different for budgeted sales mix.

Production managers make plans for obtaining quantities of materials and labour and they prepare procurement budgets for long lead-time items. They also develop production schedules to ensure that resources needed to produce the budgeted quantities will be available to cater to the marketing quantity plus the finished goods inventory based on established policies.

### **Marketing Expenses**

Marketing expenses are expenses incurred to obtain sales. A considerable portion of the amounts included in the budget may have been committed before the year begins. If the budget contemplates a selling organisation of a specified number of sales offices with specified personnel, then plans for opening or closing offices with specified personnel, then plans for change in manpower or change in the number of sales offices, may have been decided before the year begins. Advertising may have been planned much in advance.

### **Logistic Expenses**

Logistic expenses usually reported separately from order getting expenses. They include order entry, warehousing and order picking, transportation to the customer and collection of accounts receivable. Many of these are engineered costs. Nevertheless, many companies include them in the marketing budget, because they tend to be the responsibility of the marketing organisation.

### **General and Administrative Expenses**

These are general and administrative expenses both at headquarters and at business units. Overall, they are discretionary expenses though some components (such as book keeping costs in the accounting department) are engineered expenses. In budget preparation, because these are discretionary, lot of attention is given to these categories. Since the appropriate amount to authorize is subject to much debate.

### **Research and Development Expenses**

The R&D Budget uses either of the two approaches or a combination of them. One approach is to focus on the total amount. This may be the current level of spending, adjusted for inflation or it

may be a larger amount, in the belief that more can be spent in good times, if the company expects an increase in sales revenue or if there is a good chance of developing a significantly new product or process. The second approach is to aggregate the planned spending on each approved project plus an allowance for work that is likely to be undertaken, even though it is not currently identified.

**Notes**

### **Self Assessment**

Fill in the blanks:

5. A ..... is the starting point for budgeting exercise and consists of unit sales projection multiplied by expected selling price.
6. ..... expenses are expenses incurred to obtain sales.

## **7.4 Other Budgets**

### **Capital Budget**

The capital budget states the approved capital projects plus a lump-sum amount for small projects that do not require high level approval. At the budget time, the approved budgets are aggregated to an overall package and examined in total. It may turn out that the total exceeds the amount that the company is willing to spend on capital projects, if so, some projects are deleted, some are reduced in size and others are deferred. For the remaining projects, an estimate of cash spending is made for each quarter. This is necessary to prepare the cash flow statement.

### **Budgeted Balance Sheet**

The budgeted balance shows the balance sheet implications of decisions taken in the operating budget and capital budget. Overall, it is not used for management control but some parts are used for control purposes such as level of inventories, accounts receivable or accounts payable, and the operating managers are held responsible for the level of these items.

### **Budgeted Cash Flow Statement**

The budgeted cash flow statement shows how much of the cash needs can be met by retained earnings and how much must be obtained by borrowing it from other outside sources. This is necessary for financial planning. The cash inflows and outflows of cash are further divided by quarters. In addition, the treasurer needs an estimate of cash requirements for monthly (or even shorter) intervals as a basis for planning lines of credit and short-term borrowing.

### **Management by Objectives**

The financial objectives that managers are responsible for attaining during the budget year are set forth in the budgets described earlier. There are some other specific objectives - opening of new sales office, introduction of a new product line, retrain employees, install a new computer system and so on.

Some companies make these objectives explicit. The process of doing so is called management by objectives. The objectives of each responsibility centre are set a forth in quantitative term wherever possible along with the budget amounts and accepted by the respective manager becomes a motivating tool for implementation.

## **7.5 Budget Preparation Process**

### **7.5.1 Budget Department**

The budget department which normally reports to the corporate controller administers the information flow of the budgetary control system. The budget department performs the following functions:

1. Publishes procedures and forms for the preparation of the budget.
2. Co-ordinates and publishes each year, the basic corporate wide assumptions that are to be made while preparing the budgets (e.g. assumptions about the economy, inflation factor, exchange rate etc.).
3. Makes sure that information is properly communicated between inter-related organisation units (e.g. sales and production).
4. Gives assistance to budgetees in the preparation of their budgets.
5. Analyses proposed budgets and makes recommendation first to the budgetee and subsequently to the senior management.
6. Administers the process of budget revisions during the year.
7. Co-ordinates the work of budget departments in business unit budget departments.
8. Analyses report performance against the budget, interprets the result and prepares summary reports for senior management.

### **7.5.2 Budget Committee**

The Budget Committee is composed of the members of senior management such as Chief Executive Officer, Chief Operating Officer and the Chief Financial Officer. In some companies, the CEO decides without a committee. The budget committee reviews and either approve or modify each of the budgets. In large diversified company, the budget committee might meet only with the senior operating executives to review the budgets for a business unit or group of business units. In some companies, however, each business unit manager meets with the budget committee and presents his budget proposals.



*Did u know?* Usually, the budget committee must approve major budget revisions made during the year.

### **7.5.3 Issuance of Guidelines**

The first step in the budget preparation process is to develop guidelines that govern the preparation of the budget for dissemination to all managers. These guidelines are those that are implicit in the strategic plan modified by developments that have taken place since its approval, especially the company's performance for the year to date and its current outlook. All responsibility centres must follow some of the guidelines e.g. inflation in general and inflation for specific items such as: wages, cost of utilities, corporate policies on how many persons can be promoted, compensation at each wage and salary level, including employee benefits. Others may be specific to certain responsibility centres.

The budget staff develops the guidelines and senior management approves them. The staff also develops a time table for the steps in the budget preparation process. The budget department then disseminates this material throughout the organisation.

**Notes**

#### **7.5.4 Initial Budget Proposal**

Using the guidelines, responsibility centre managers, assisted by their staffs, develop a budget request. Because most responsibility centers will start the budget year with the same facilities, personnel and other resources that they have currently, this budget is based on the existing levels, which are modified in accordance with the guidelines. Changes from the current level of performance can be classified as: (a) changes in external forces and (b) Changes in internal policies and practices. They include:

Changes in external factors:

1. Changes in the general level of economic activity as it affect the volume of sales. (e.g. expected growth in the demand for a product line).
2. Expected changes in the price of purchased materials and services and expected changes in labour rates.
3. Expected changes in the cost of discretionary activities (e.g. marketing, R&D and administration).
4. Changes in selling prices. These are the changes in the cost which can be recovered (if possible) through increase in selling prices.

Changes in internal policies and practices:

1. Changes in production costs, reflecting new equipments and methods.
2. Changes in discretionary costs, based on anticipated changes in workload.
3. Changes in the market share and product mix.

#### **Negotiation**

The budget discusses the proposed budget with his superior. The superior attempts to judge the validity of each of the adjustments. The governing consideration is that the performance in the budget year should be an improvement over performance in the current year. The superior also recognizes that he will become the budgetee at the next level of the budget process and therefore, must be prepared to defend the budget that is finally agreed to.

Many budgetees tend to budget revenues somewhat lower and expenses somewhat higher than their best estimates. The superior should be able to find out such differences. The difference between the budget amount and the best estimate is called slack.

#### **Review and Approval**

The proposed budgets go up through successive levels in the organisation. When they reach the top of a business unit, analyst puts the piece together and examine in total. The analyst studies: (1) whether production budget is consistent with planned sales volume (2) are service and support centers planning for the services that are being requested of them (3) Overall, whether the budget will produce a satisfactory profit.

If the above are not completed, the budget draft is sent back for reworking. The same types of analysis takes place at corporate headquarters.

<b>Notes</b>	The final approved budget is recommended by the budget committee to the chief executive office. The CEO also places the approved budget to the Board of Directors for ratification. This happens prior to the start of the budget year.
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## **7.6 Budget Revisions**

There are two general types of budget revisions:

1. Procedures that provide for systematic (say quarterly) updating of the budgets.
2. Procedures that allow revisions under special circumstances.

If budget revisions are limited only to unusual circumstances, such revisions should be adequately renewed. In general, permission to go for budget revision is difficult to obtain. Budget revisions should be restricted to those cases where approved budget has become so unrealistic that it no longer provides a useful control device i.e., budget revision must be justified on the basis of significant changed conditions from those existing when the original budget was approved.

## **Contingency Budgets**

Some companies routinely prepare contingency budgets that identify management action to be taken if there is significant decrease in sales volume from what was anticipated at the time of developing the budget (e.g. actions to be taken if there is a decrease of 20 percent from the best estimate of sales volume). The contingency budget provides a way of quickly adjusting to changed conditions if the situation arises. To find the effect of changes in sales volume while preparing contingency costs are divided into three categories - fixed costs, unavoidable variable costs and management discretionary costs. Besides, business units, managers describe the specific actions that would like to take to control employment, total assets and capital expenditures in case of a reduction in sales, when these actions would be put into effect.

## **Self Assessment**

Fill in the blanks:

7. The budgeted .....shows how much of the cash needs can be met by retained earnings and how much must be obtained by borrowing it from other outside sources.
8. The first step in the .....process is to develop guidelines that govern the preparation of the budget for dissemination to all managers.

## **7.7 Behavioural Aspects while Preparing Operating Budgets**

One of the purposes of management control system is to encourage the manager to be effective and efficient in attaining the goals of the organization.

Some of the motivational considerations while preparing the operating budgets are described below:

1. ***Participation in the budgetary process:*** Actually, an effective budget preparation process blends the two approaches - 'top down' and 'bottom up'. Top down budgeting means senior management sets the budget for the lower levels and bottom up budgeting signifies lower level managers participate in setting the budget amounts. In most of the cases, budgetees prepare the first draft of the budget for their area of responsibility which is "bottom up" but they do so within guidelines established at higher levels, which are "top down". Senior managers review these proposed budgets with the budgetee, the purpose

being that budgetees do not “play games” with the budgeting system. The review prices should be perceived as being fair; the superior should change the budgeted amounts after convincing the budgetee that such a change is reasonable.

**Notes**

Research shows that budget participation i.e., a process in which budgetee is both involved in and has influence over the setting of budget amounts, has a positive effect on managerial motivation for two reasons:

- (i) There is likely to be greater acceptance of budget goals if they are perceived as being under manager's personal control rather than being imposed externally.
  - (ii) Participative budgeting results in effective information exchanges, between the budgetees who are closest to the product/market environment, and the budget department.
2. **Degree of budget target difficulty:** The ideal target is one that is challenging as well as attainable i.e., in statistical terms, it may be interpreted that a manager who performs reasonably well has at least a 50 percent chance of achieving the budgeted figures. There are several reasons why senior management approves achievable budgets for business units:
- (i) If the budgeted target is too difficult, managers are motivated to take short-term actions that may not be in the long-term interests of the company.
  - (ii) Achievable budget targets reduce the chance of engaging in data manipulation (e.g. inadequate provision for warranty claims, bad debts, inventory obsolescence and the like).
  - (iii) If business unit profit budgets represent achievable targets, senior management can share such information with security analysis shareholders and other external agencies with a reasonable expectation of being correct.
  - (iv) When business unit managers are able to meet and exceed their targets, there is a “winning atmosphere” and positive attitude within the company.
  - (v) Difficulty to attain profit budget also involves high sales target.

This results in over-commitment of resources. If actual sales levels do not reach the optimistic targets, it is administratively and politically awkward to downsize operations.

One limitation of an achievable target is the possibility that business unit managers will not put forth their best once the budget is met. This can be overcome by providing suitable incentive by way of bonus payments.

Another limitation is that if the business unit manager has exceeded the profit figures, the senior management should not automatically increase the profit budget for the following year without proper review. Otherwise, business unit managers will not give their best.

3. **Senior management involvement:** Senior management involvement is necessary for any budget system to be effective in motivating budgetees. Management must participate in the review and approval of the budgets and the approval should not be a rubber stamp.

Management also must follow up on budget results. If there is no top management feedback with respect to budget results, the budget system will not be effective in motivating the budgetee.

4. **Crucial role of budget dept:** The budget department has a particularly difficult behavioural problem in dealing with line managers on one hand as well as to ensure that budgets are prepared properly and that information is accurate.

**Notes**



*Example:* The budget department tries to ensure that the budget does not contain excessive allowances (i.e., water).

In other cases, the explanation of budget variances provided by the budgetee may hide or minimize, a potentially serious situation and the discussion with the line managers may sometimes perceive to be threatening or hostile by the latter. The budget department must walk a fine line helping the line manager and ensuring the integrity of the system.

To perform their function effectively, the members of the budget department must have the reputation for impartiality and fairness. The members of the budget department should also have the personal skills to deal effectively with people.

### **Self Assessment**

Fill in the blanks:

9. .... budgeting means senior management sets the budget for the lower levels and bottom up budgeting signifies lower level managers participate in setting the budget amounts.
10. If the budgeted target is too difficult, managers are motivated to take ..... actions that may not be in the long-term interests of the company.

## **7.8 Budget Ratios**

The following are usually used to measure development from the budget:

1. ***Labour utilisation can be measured by two ratios, namely:***

- (i) Measured work performance ratio calculated as under:

$$\frac{\text{Measured work produced in Std. hours}}{\text{Time taken to produce the work}} \times 100$$

- (ii) Attendance time performance ratio calculated as under :

$$\frac{\text{Measured work produced in Std. hours}}{\text{Total attendance time}} \times 100$$

2. ***Standard capacity usage ratio:*** This is the relationship between the budgeted number of working hours and the maximum possible no. of working hours in the budgeted period. This % indicates the proportion of the available facilities which the company intends to use during the budget period. The facilities are generally measured in machine hour or direct labour hours.



*Example:* Budgeted no. of working hours 4,000 and maximum possible no. of working hours in a budget period 5,000. Capital usage ratio =  $\frac{4000}{5000} \times 100 = 80\%$

3. ***Actual capacity utilisation ratio:*** This ratio indicates the extent of which facilities were actually utilised during the budget period.

**Notes**



Example: Actual hours worked 3,600, Budgeted hours 4,000, Actual capacity utilisation

$$\text{ratio} = \frac{3600}{4000} \times 100 = 90\%$$

4. **Levels of Activity Ratio:** This may be defined as the number of standard hours equivalent to work produced expressed as a percentage of budget standard hours.



Example: Actual production converted into standard hours 5,600 Budgeted Production converted into standard hours 6,000

$$\text{Level of activity ratio} = \frac{5600}{6000} \times 100 = 93.33\%$$

5. **Efficiency Ratio:** This ratio may be defined as standard hours equivalent to work expressed as a percentage of the actual hours spent in producing the work.



Example: Standard hours work produced 5600; Actual hours worked 5,000, Efficiency

$$\text{Ratio} = \frac{5600}{5000} \times 100 = 112\%$$

6. **Calendar Ratio:** This ratio may be defined as the relationship between the number of working days in a period and the number of working days in the relative budget period.



Example: Actual working days in a month 26; Budget working days in a month 25, Calendar Ratio

$$\text{Calendar ratio} = \frac{26}{25} = 104\%$$

## Self Assessment

Fill in the blanks:

11. .... is the relationship between the budgeted number of working hours and the maximum possible no. of working hours in the budgeted period.
12. .... is defined as the relationship between the number of working days in a period and the number of working days in the relative budget period.

## **7.9 Management Control of Operations**

Management control is working through others, so that the work may get done effectively. Managers, literally, do not control costs; what managers do is to influence the actions of the people, who are responsible for incurring the costs. The manager selects the workforce, makes sure that they are adequately trained, decides where they fit best in the organisation, provides advice, suggestions and disciplines, resolves disputes within the responsibility centres, approves proposed actions that the employees are authorised to take on their own authorities, interacts with other managers to obtain their coordination and to resolve problems when their activities impede the work of the responsibility centre and above all, seeks to create an element that induces employees to work efficiently and effectively. To carry on these activities, managers need information which are identified as:

Notes

### 7.9.1 Formal Information

1. **Task control information:** A production control system provides information that schedules the flow of material, labour and other resources, so the correct end products in the correct quantities emerge at the end of the production.
2. **Budget reports:** The approved budget is the prescribed financial device for controlling the activities of the responsibility centre and a report that compares actual revenues and expenses with budgeted amounts is the main part of the report.
3. **Non-financial information:** Sales volume in units as well as in rupees. Others are reported because the information may require prompt action. These are termed as key variables bookings, back orders market share, key actual numbers, capacity utilisation, quality, on time delivery, inventory turnover. Recent developments that have influenced the Management Control System, include just-in-time systems, total quality control, computer integrated manufacturing and decision support systems.

### 7.9.2 Preparation of Flexible Budget

The steps are as under:

1. Since decentralisation of cost responsibility is an essential features of flexible budgetary control system, the first step is to define the departments of the business. A department should be established if its functions or processes are of a similar nature or are related in one logical group.



*Example:* In textile mills, carding and spinning can constitute one department, weaving another department, processing of cloth yet another department and so on. Another factor in establishing a department is that it should not consist of two parts of the organisation each having different executives responsible for its activities.

2. The budgeted cost of each department will be related to the standard activity of the department and of the constituent cost centres of the respective departments. Similarly, the budget of service departments will be based on the level of activity planned for the production departments. The standard activity is demonstrated by standard hours. A standard hour may be defined as a hypothetical hour which measures the amount of work which should be performed in one hour. Once this is established, standard hours of the actual output can be calculated and by comparing the same with the actual hours spent, the efficiency of the cost centre can be assured. The concept of standard hour is also useful for the firm producing a large number of different products requiring different standard hours.
3. The next step is the establishment of departmental overhead expenses budgets based on the level of activity planned for each cost centre. Past experience can serve as a guide. The budgets should by and large be set on the basis of studies of what is reasonable including possible economies. It is also preferable to estimate the expense under each account for each cost centre based on the proposed level of activity and then to term up to arrive at the departmental budget.
4. The next step is to segregate all expenses into fixed and variable. Some of the expenses are semi variable in nature and hence, these expenses have to be segregated into fixed and variable for giving proper budget allowances.

**Advantages of Flexible Budgeting**
**Notes**

1. By giving allowance in accordance with the level of activity attained, the variances due to volume, efficiency and spending can be analysed and appropriate action can be taken.
2. The management is able to assess the effect of their decisions. The deviation from budget arising from a decision to vary the output can be studied.
3. It is useful for planning changes in the level of output.

**Illustration:** The following examples will show how the budget allowance is calculated. The allowance is calculated with reference to the level of activity achieved as per details of working given below in the table. Allowances of fixed expenses are same as budget as they are uncontrollable expenses.

Expense head	Control basis	Budget 8800 Hrs.			Allowance 7500 Std. Hrs.			Actual
		Total	Fixed	Variable	Total	Fixed	Variable	
Supervisors' salaries	F	84	84	-	84	84	-	89
Clerks	F	17	17	-	17	17	-	14
Indirect labour	V	247	-	247	210	-	210	230
Tools	SV	120	52	68	110	52	58	115
Consumable stores	V	80	-	80	68	-	68	100
Power	SV	100	33	67	90	33	57	98
Maintenance	SV	150	48	102	135	48	87	110
Depreciation	F	150	150	-	150	150	-	150
Scrap	V	80	-	80	68	-	68	60
		1028	384	644	932	384	548	966

Standard hours as per budget 8800

Standard hours produced 7500

Actual hours worked 7920

**Solution:**

$$\begin{aligned}
 \text{Level of activity} &= \frac{\text{Standard hours produced}}{\text{Standard hours as per budget}} \times 100 \\
 &= \frac{7500}{8800} \times 100 = 85\%
 \end{aligned}$$

Calculation of allowances: R

Indirect labour	$247 \times 0.85 = 210$
Tools	$68 \times 0.85 = 58$
Consumable stores	$80 \times 0.85 = 68$
Power	$67 \times 0.85 = 57$
Maintenance	$102 \times 0.85 = 87$
Scrap	$80 \times 0.85 = 68$

**Notes**

**Illustration:** The following shows the flexible budget for variable and fixed factory overheads for anticipated monthly volume range:

Standard machine hours allowed	800	900	1000	1100
Variable factory overhead:				
Machine adjustments and repairs	₹ 8000	₹ 9000	₹ 10,000	₹ 11000
Idle time	800	900	1000	1100
Rework	800	900	1000	1100
Overtime premium	400	450	500	550
Supplies	3600	4050	4500	4950
	<b>13600</b>	<b>15300</b>	<b>17000</b>	<b>18700</b>
Fixed Factory Overhead:				
Supervision	2700	2700	2700	2700
Depreciation plant	1000	1000	1000	1000
Depreciation equipment	15000	15000	15000	15000
Property taxes	1000	1000	1000	1000
Insurance factory	300	300	300	300
	<b>20000</b>	<b>20000</b>	<b>20000</b>	<b>20000</b>

A team of operating personnel and accountants jointly decided that machine hours was the principal cost driver and based on denominator volume of 1,000 machine hours, the budgeted variable application rate of ₹ 17 per hour was fixed. The team also selected a denominator volume of 1,000 machine hours for setting the budgeting fixed OH application rate. Actual factory overhead data for the month ended March 31, 19..... was as under:

Variable Overhead	₹.	Fixed Overhead	₹
Machine adjustments & repairs	8200	Supervision	2700
Idle time	600	Depreciation - Plant	1000
Rework	850	Depreciation Equipment	15000
Overtime premium	600	Property Taxes	1150
Supplies	4000	Insurance - Factory	350
	<b>14250</b>		<b>20200</b>

Total actual factory overhead  $14,250 + 20,200 = ₹ 34,450$ .

The actual hours of inputs were 790. The standard time allowed per unit of production was 0.4 hour. There were 2,000 units of product manufactured. Compute Variance analysis of overheads.

**Solution:** The budgeted fixed factory overhead rate is ₹ 20,000 / 1,000 hours i.e., ₹ 20 per machine hour.

**Option A:** If separate variable and fixed overhead are used for planning and control purposes.

$$\text{Variable Overhead Variance} = \text{Actual Costs} - (\text{Applied: Standard Inputs allowed for Actual outputs} \times \text{Budgeted Rate})$$

Applied is basically the data provided by flexible budget for Actual Output (800 units)

$$= 14,250 - 800 \times 17$$

$$= 650 \text{ A (under applied V. OH)}$$

$$\begin{aligned}
 \text{Efficiency Variance} &= (\text{Inputs actually used} - \text{Inputs that should i.e., direct labour have been used}) \times \text{Standard unit price of inputs} \\
 &= (790 - 800) \times 17 \\
 &= 170 \text{ F}
 \end{aligned}$$

Notes

The efficiency variance for variable overhead is a measure of the extra overhead incurred (or saved) solely, because the chosen cost drivers' inputs actually used differ from the inputs that should have been used.

Spending/Expenses overhead variable is defined as the actual amount of overhead incurred minus the expected amount based on flexible budget for actual inputs. Expressed another way, the spending variance for variable overhead is the flexible budget variance minus the efficiency variance. The spending variance is really a composite of price and other factors. It is the part of the flexible budget variance unexplained by the efficiency variance attributable to the relationship of variable overhead to direct labour. In this case, variable overhead spending variance = Flexible budget variance - Efficiency variance.

$$= 650 \text{ (A)} - 170 \text{ F} = 820 \text{ (A)}$$

$$\begin{aligned}
 \text{Fixed Overhead Variance} &= \text{Actual Costs} - \text{Applied: Standard Inputs allowed for Actual outputs} \times \text{Budgeted Rate}
 \end{aligned}$$

$$\therefore \text{Standard Inputs Allowed for Actual Output} \times \text{Budgeted Rate}$$

$$\begin{aligned}
 &= 20,200 - 800 \times 20 \\
 &= 4200 \text{ (A)} \text{ [under applied fixed overhead]}
 \end{aligned}$$

Fixed overhead production volume variance arises when actual volume is different from denominator volume.

$$\begin{aligned}
 \text{Production Volume Variance} &= \text{Budgeted fixed overhead} - \text{Applied Fixed Overhead}
 \end{aligned}$$

(Denominator volume Actual outputs) in units - in product units of standard inputs × Budgeted fixed overhead per product unit

$$\begin{aligned}
 &= (1,000 - 800) \times 20 \\
 &= 4,000 \text{ (A)}
 \end{aligned}$$

Since production volume is less than denominator value, volume variance is adverse. Spending/Expense Fixed Overhead Variance

$$\begin{aligned}
 &= \text{Budget} - \text{Actual} \\
 &= 20,000 - 20,200 \\
 &= 200 \text{ (A)}
 \end{aligned}$$

**Option B:** If combined (total) single one rate is used, the rate will  $20 + 17 = ₹ 37$ . Combined factory overhead variance = Actual Costs - Applied

$$= 34,450 - 800 \times (17 + 20) = 4,850 \text{ (A)}$$

$$\begin{aligned}
 \text{Production Volume Variance} &= \text{Budgeted Total Overhead} - \text{Applied}
 \end{aligned}$$

$$\begin{aligned}
 &= (13,600 + 20,000) - 800 \times (37) \\
 &= 33,600 - 29,600 \\
 &= 4,000 \text{ (A)}
 \end{aligned}$$

<b>Notes</b>	$\begin{aligned}\text{Efficiency Variance} &= (\text{Standard inputs allowed for actual outputs} - \text{Actual Inputs}) \\ &\quad \times \text{Budgeted Rate} \\ &= 13,600 + 20,000 - (13,430 + 20,000) \\ &= 170F\end{aligned}$ $\begin{aligned}\text{Spending Variance} &= \text{Budget} - \text{Actual} \\ &= (13,430 + 20,000) - 34,450 \quad [790 \times 17 = 13430] \\ &= 1,020 (A)\end{aligned}$
--------------	---

**Variable from Flexible Budget:** Flexible budget for actual output of 2000 i.e., 800 standard hours  
 $= 20000 + 13600 = ₹ 33600$

Total variances from flexible budget

$$\begin{aligned}&= 34450 - 33600 \\ &= 850 (A)\end{aligned}$$

which consists of Efficiency variance of 170 F and spending variance = 1020 (A)

Analysis of Factory – Overhead Variances:

(1) Actual costs incurred	(2) Flexible Budget Budget: Actual Inputs × Budgeted Rate	(3) Flexible Budget: Budget: Std. Inputs allowed for Actual Outputs × Budgeted Rate	(4) Applied: Std. Inputs allowed for Actual Outputs × Budgeted Rate
---------------------------	---	---	---

#### Option A-

##### Variable OH

Total given	$790 \times 17$	$800 \times 17$	$800 \times 17$
₹ 14250	= 13430	= 13600	= 13600
- ₹ 820 A	- ₹ 170 F	-	-
Spending Variance	Efficiency Variance	Never a Variance	
- ₹ 650 A			-
Flexible Budget Variance			
- ₹ 650 A			-

Under Applied Variable Overhead

**Option A-**
**Notes**
**Variable OH**

20200	20000	20000	800 x 20
			= 16000
- ₹ 200 A	-	-	₹ 4000 A -
Spending Variance	Never a Variance		Production Vol. Variance
	₹ 200 A		₹ 4000 A
-	Flexible Budget Variance	- Production vol. Variance	-
-	₹ 4200 A		-

**Under Applied Fixed Overhead**

(1) Actual costs incurred	(2) Flexible Budget Budget: Actual Inputs × Budgeted Rate	(3) Flexible Budget: Budget: Std. Inputs allowed for Actual Outputs × Budgeted Rate	(4) Applied: Std. Inputs allowed for Actual Outputs × Budgeted Rate
---------------------------	---	---	---

**Combined Overhead**
**Option B**

14250 + 20200	13430 + 20000	13600 + 20000	13600 + 16000
= 34450	= 33430	= 33600	= 29600
3. Variance analysis - ₹ 1020 A	- ₹ 170 F	- ₹ 4000 A	-
	Spending Variance	Efficiency Variance	Prod. Volume Variance
2 . Variance analysis - ₹ 850 A		₹ 4000 A	-
	Flexible Budget Variance (Controllable Variance)	Prod. Volume Variance	
1. Variance analysis -		₹ 4850 A	-

**Total Variances under applied Overhead**

**Illustration:** The following information is provided:

	Budget	Actual
Number of working days	20	21
Man hours	40000	43000
Output per man hour (in units)	3, 2	3, 0
Total output (units)	1,28,000	1,29,000
Overhead – Fixed	₹ 32000	₹ 31500
Variable	₹ 102400	₹ 114400

Compute Variable Overhead Variances and Fixed Overhead Variances

**Notes**

*Solution:* Variable OH Variance =  $\frac{\text{Actual} - \text{Std. input allowed}}{\text{Actual output}} \times \text{Budgeted Rate}$

$$= 1,14,400 - \frac{1,29,000}{3.2} \times 2.56$$

$$[\text{Budgeted Rate per hour} = \frac{102400}{40000}]$$

$$= 1,14,400 - 1,03,200$$

$$= 11,200 (\text{A})$$

Efficiency Variance = (Std. Input hour – Actual hours) × Budgeted Rate

$$= (40,312.5 - 43,000) \times 2.56 [\frac{1,29,000}{3.2} = 40312.5]$$

$$= 6,880 (\text{A})$$

Exp./Spending Variance = Actual input × Budgeted Rate – Actual OH

$$= 43,000 \times 2.56 - 1,14,400$$

$$= 1,10,080 - 1,14,400$$

$$= 4,320 (\text{A})$$

## **7.10 Management Action**

The cardinal principle in analyzing formal financial reports is that the monthly report should contain the major surprises. Significant information should be communicated by telephone, fax, electronic mail or personal meetings as soon as it becomes known. The formal report confirms that senior managers have learned about the specifics and have taken action prior to the receipt of the formal report.

The importance of formal reporting is that it provides the desirable pressure in subordinate managers to take corrective action on their own. Further, the formal report provides more accurate information and provides a basis for analysis as compared to informal sources which is general and unprecise.

Usually, there is a discussion between the business unit manager and his or her superior, in which business unit manager explains the reasons for significant variances. The action being taken to correct unfavourable situations and the expected timing of each corrective action. These explanations are necessarily subjective and they may be biased. Operating managers like most people, don't like to admit that unfavourable variances are caused by their errors. A senior manager, based on experience, can judge whether the business unit manager is frank and forthcoming and accordingly view the report.

A profit report does not carry any meaning unless they lead to action. The action may be by way of praise for the job well done. Suggestions for doing things differently or more drastic personnel actions. However, these actions are by no means taken for every business unit every month. As long as business is going well, praise is the most that may be necessary.


**Notes**

*Task* The profit budget for the Crocker Company for January 2007 was as follows:

Sales	₹ 498
Variable cost of sales	278
<b>Sales</b>	<b>2500</b>
Standard cost of sales	1620
<b>Gross Profit</b>	<b>880</b>
Selling expense 250	
Research & Development expense 300	
Administrative expense 120	
<b>Total expense</b>	<b>670</b>
<b>Net profit before taxes</b>	<b>210</b>

The product information used in developing the budget was as follows:

	E	F	G	H
Sales - units (000)	1000	2000	3000	4000
Price per unit	₹ 0.15	₹ 0.20	₹ 0.25	₹ 0.30
Standard cost per unit				
Material	0.04	0.05	0.06	0.08
Direct labour	0.02	0.02	0.03	0.04
Variable overhead	0.02	0.03	0.03	0.05
<b>Total variable cost</b>	<b>0.08</b>	<b>0.10</b>	<b>0.12</b>	<b>0.17</b>
Fixed overhead (₹ 000)	20	60	60	160
Total standard cost	0.10	0.13	0.14	0.21

The actual revenues and costs for January 2007 were as follows:

	₹ (000)
Sales	2160
Standard cost of sales	1420
Net standard cost of variances	160
Actual cost of sales	<b>1580</b>
Gross profit	580
Selling expense	290
Research & Development expense	250
Administrative expenses	110
<b>Total expense</b>	<b>650</b>
Net Loss	₹ (70)

Operating statistics for January 2007 were as follows:

	E	F	G	H
Sales (units)	1000	1000	4000	3000
Sales price	₹ 0.13	₹ 0.22	₹ 0.22	₹ 0.31
Production	1000	1000	2000	2000
Actual manufacturing costs (000)				
Material 360				
Labour 200				
Overhead 530				

Prepare an analysis of variance between actual profits and budgeted profits for January 2007.

**Notes**

**Self Assessment**

Fill in the blanks:

13. The importance of ..... is that it provides the desirable pressure in subordinate managers to take corrective action on their own.
14. ..... overhead variable is defined as the actual amount of overhead incurred minus the expected amount based on flexible budget for actual inputs.

**7.11 Summary**

- Strategic planning is the process of deciding on the nature and size of several programmes that are to be undertaken in implementing an organization's strategies.
- Strategic plan is prepared early in the year and developed on the basis of the best information available at that time; its preparation involves relatively few managers and it is stated in fairly broad terms.
- There are two general types of budget revisions:
  - i. Procedures that provide for systematic (say quarterly) updating of the budgets.
  - ii. Procedures that allow revisions under special circumstances.
- One of the purposes of management control system is to encourage the manager to be effective and efficient in attaining the goals of the organization.
- Management control is working through others, so that the work may get done effectively. Managers, literally, do not control costs; what managers do is to influence the actions of the people, who are responsible for incurring the costs.
- The importance of formal reporting is that it provides the desirable pressure in subordinate managers to take corrective action on their own.

**7.12 Keywords**

***Actual Capacity Utilisation Ratio:*** This ratio indicates the extent of which facilities were actually utilised during the budget period.

***Budgeted Balance Sheet:*** The budgeted balance shows the balance sheet implications of decisions taken in the operating budget and capital budget.

***Calendar Ratio:*** This ratio may be defined as the relationship between the number of working days in a period and the number of working days in the relative budget period.

***Capital Budget:*** The capital budget states the approved capital projects plus a lump-sum amount for small projects that do not require high level approval.

***Efficiency Ratio:*** This ratio may be defined as standard hours equivalent to work expressed as a percentage of the actual hours spent in producing the work.

***Levels of Activity Ratio:*** This may be defined as the number of standard hours equivalent to work produced expressed as a percentage of budget standard hours.

***Logistic Expenses:*** Logistic expenses usually reported separately from order getting expenses. They include order entry, warehousing and order picking, transportation to the customer and collection of accounts receivable.

**Management by Objectives:** The financial objectives that managers are responsible for attaining during the budget year are set forth in the budgets described earlier.

**Notes**

**Marketing Expenses:** Marketing expenses are expenses incurred to obtain sales. A considerable portion of the amounts included in the budget may have been committed before the year begins.

**Revenue Budgets:** A revenue budget is the starting point for budgeting exercise and consists of unit sales projection multiplied by expected selling price.

**Standard Capacity usage Ratio:** This is the relationship between the budgeted number of working hours and the maximum possible no. of working hours in the budgeted period.

**Strategic Planning:** Strategic planning is the process of deciding on the nature and size of several programmes that are to be undertaken in implementing an organisation's strategies.

## **7.13 Review Questions**

1. What are the basic characteristics of budgeting?
2. What is the function of budget committee and budget manual?
3. What is the starting point for preparation of individual budgets?
4. Discuss the relationship between the production budget and availability of raw materials.
5. In controlling raw materials, there are two basic responsibilities. Indicate the two responsibilities and explain the profit planning and control approach to resolving them.
6. Explain the relationship of the analysis of budget variations to the monthly performance report.
7. As a new corporate controller, respond to a manager's remarks made at first Monday morning meeting, "These weekly variance reports must be costing us a lot of money. Let us just prepare them once a quarter. As long as the information on the report is correct, who cares when we get them?"
8. Comments on the following statement made by an assembly worker to his supervisor. "Standards as just pressure device used by management to criticize employees. Nobody ever achieves the standards."

### **Answers: Self Assessment**

- |                                   |                       |
|-----------------------------------|-----------------------|
| 1. Strategic planning             | 2. Budget             |
| 3. Budget                         | 4. Beginning          |
| 5. Revenue budget                 | 6. Marketing          |
| 7. Cash flow statement            | 8. Budget preparation |
| 9. Top down                       | 10. Short-term        |
| 11. Standard capacity usage ratio | 12. Calendar Ratio    |
| 13. Formal reporting              | 14. Spending/Expenses |

Notes

## **7.14 Further Readings**



Anthony, Robert N and Govindrajan, Vijay, "*Management Control System*", Tata McGraw Hill.

Kaura, Mohinder N, "*Management Control and Reporting System*", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "*Management Control System: Text and Cases*", Pearson Education Asia.

Saravanavel, P, "*Management Control System*", Himalaya Publishing House.



*Online links* <http://financialplan.about.com/msubbudg.htm>  
<http://wealth.moneycontrol.com/planbudgeting/>  
<http://www.kesdee.com/pdf/budgeting.pdf>

## Unit 8: Management Control through Variance Analysis

Notes

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- Objectives
- Introduction
- 8.1 Variance Analysis for Control Actions
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### Objectives

After studying this unit, you will be able to:

- Discuss the variance analysis for control actions
- Explain the analysis of sales variances
- Describe the market size and market share variances

### Introduction

Variance analysis is a part of the process of control and involves the calculation of variance and the interpretation of results so as to localize the different factors that are responsible for the variance. It leads us to ascertain the magnitude of each of the variances and the causes thereof so that corrective action may be taken. Variance analysis helps the management in decision-making. In addition (i) it is used in cost-control, (ii) gives early warning for corrective action and (iii) is useful in accountability.

## Notes

**8.1 Variance Analysis for Control Actions**

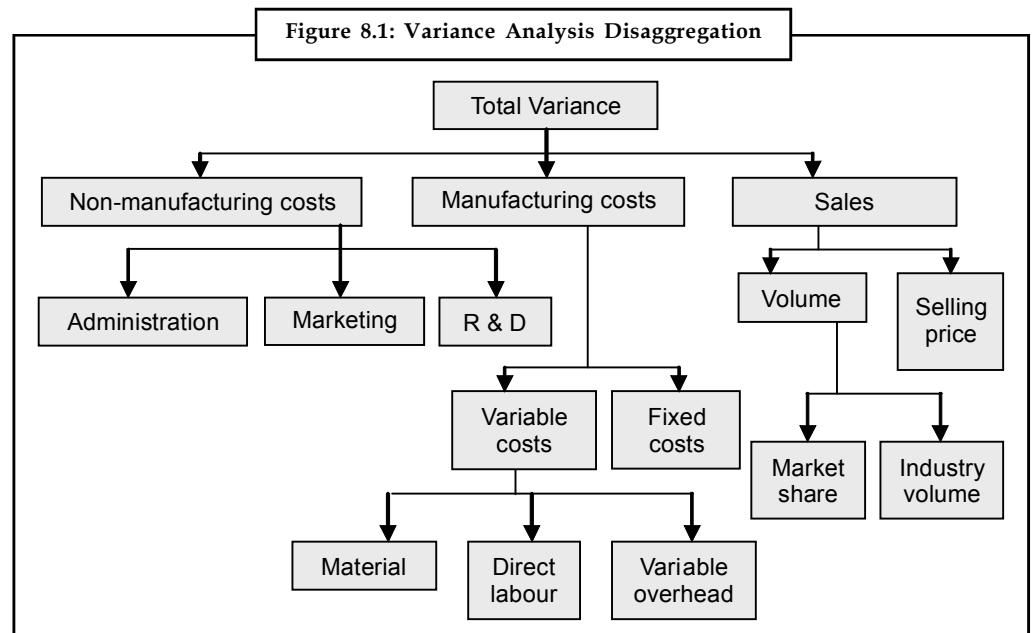
Since a budget is an instrument of control, it is necessary to compare the actual results with the budgeted results. A variance occurs when actual costs differ from standard costs. The term variance analysis refers to the systematic evaluation of variances in an attempt to provide managers with useful information for measuring efficiency and improving performance.

If actual cost is less than the standard cost, the variance is favourable. If actual cost is more than the standard cost, the variance is unfavourable. A favourable variance indicates efficiency and an unfavourable variance indicates inefficiency.



*Did u know?* Variances occur due to three reasons. A managerial decision to respond to some new developments which were not initially anticipated, uncontrollable exogenous factors, and controllable factors that needs to be investigated.

Effective systems identify variances down to the lowest level of management. Variances are hierarchical. As shown in Figure 8.1, they begin with the total business unit performance which is divided into revenue variances and expense variances. Revenue variances are further subdivided into volume and price variances for the total business unit and for each marketing responsibility centre within the limits. They can be further divided by sales areas and sales regions. Expense variances can be divided between manufacturing expenses and other expenses. Manufacturing expenses can be further subdivided by factories and departments within factories. Therefore, it is possible to identify each variance with the individual manager who is responsible for it. This type of analysis is a powerful tool without which the efficacy of profit budgets would be limited.



The following framework can be used to conduct variance analysis:

1. Identify the key causal factors that affect profits.
2. Breakdown the overall profit variances by these key causal factors.
3. Focus on the profit impact of variation in each causal factor.

- |  |              |
|--|--------------|
| 4. Determine the specific, separable impact of each causal factor by varying a particular factor while holding all others constant.  | <b>Notes</b> |
| 5. Add complexity sequentially, one layer at a time, beginning at a very basic "common sense" level.   |              |
| 6. Stop the process when the added complexity at a newly created level is not justified by added useful insights into the causal factors underlying the overall profit variance. |              |

The techniques of variance analysis, as stated, are a mathematical manipulation of two sets of data to gain some insights into the underlying causes of variation. One amount is treated as the basic standard or reference point. Variance analysis has wide applications and is frequently applied in the following situations:

1. Investigation of the variations between actual results of the current period with the actual results of the prior period, the prior period is considered as the base.
2. Investigation of the variations between actual results and standard costs, the latter is treated as the base.
3. Investigation of the variations between actual results and budget goals, the latter is treated as the base.

### **8.1.1 Approaches**

There are numerous ways to investigate variances. To determine the underlying causes, some of the primary approaches are:

1. Conferences with supervisors, foreman and sometimes other employees in the particular responsibility centres involves
2. Analysis of the work situations including the flow of work, co-ordination of activities, effectiveness of the supervision and other prevailing circumstances
3. Direct observation
4. On the spot investigation by line officials
5. Investigation by staff groups (specifically designated as to responsibilities)
6. Audits by internal audit staff
7. Special studies
8. Variance analysis

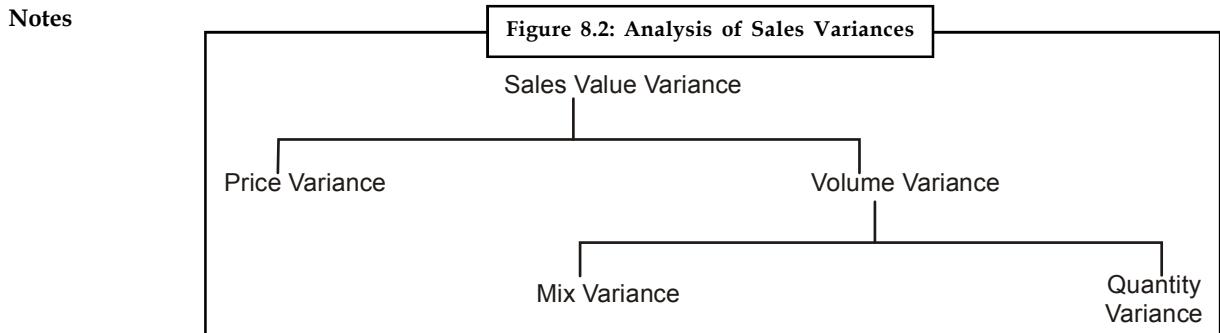
### **Self Assessment**

Fill in the blanks:

1. A .....occurs when actual costs differ from standard costs.
2. The techniques of .....are a mathematical manipulation of two sets of data to gain some insights into the underlying causes of variation.

### **8.2 Analysis of Sales Variances**

There are two distinct methods of computing and presenting sales variance, (1) Sales value or Turnover method and (2) Sales margin (Profit) method. The first method shows the effect of variances in terms of turnover and second shows the effect in terms of profits.



### 8.2.1 Sales Variance Method

In this method, the variances are computed on the basis of sales value. This method gives the sales manager, the effect of various factors affecting total sales value such as: price, quantity and sales mix.

**Total sales value variance** “Difference between actual sales value and budgeted sales value: The variance can be bifurcated into sales price variance and sales volume variance. Sales price variance:  $(\text{Actual Unit Price} - \text{Budgeted Unit Price}) \times \text{Actual Qty. in Units}$

It can also be calculated by finding out the variance from the flexible budget i.e., difference between actual result and the flexible budget amounts for the actual output achieved,

Sales volume variance can be calculated by the following formula:

$$\text{Budgeted Price} \times \text{Difference between actual quantity and budgeted quantity.}$$

It can be calculated by finding out the difference between the flexible budget amounts and the static (master) budget amounts, unit selling price remaining constant.



*Notes* In case of a multi-product situation, the actual sales mix may be different from the budgeted sales mix, a possible reason for this being that salesman may have concentrated on their favourite products and therefore sold larger quantities of such products than as envisaged in the budget.

In case of a multi-product situation, the volume variance can be further analysed in terms of a sales mix variance and a quantity variance. The same approach can be used to analyse a territory-wise sales performance report. If in a particular sales district, there is a very high variance, it needs to be analysed further to understand the causes underlying, the symptoms reflected by high variances.

### 8.2.2 Sales Mix Variance

$(\text{Actual Sales Quantity in Actual Mix} - \text{Actual Sales Qty. in Budgeted Mix}) \times \text{Budgeted price per unit.}$

It can be calculated by the difference between the amount of sales value in flexible budget based on actual sales volume at actual sales mix and that amount in the flexible budget based on actual sales volume at budgeted mix based on budgeted selling prices.

### 8.2.3 Sales Quantity Variance

Notes

Budgeted price per unit of budgeted Mix (Actual Total Qty. - Budgeted Total Qty.)

It can be calculated by the differences between sales value in the flexible budget based on actual sales volume at budgeted sales mix and that amount in the static (Master) budget based on budgeted selling prices.

Assume the following budgeted and actual data for a particular month in the example,

**Illustration:**

	Budgeted		Actual	
	Jug wine ₹	Premium wine ₹	Jug wine ₹	Premium wine ₹
Selling price per unit	5	16	5.50	15.50
Sales in units	1200	400	1100	700

**Solution:**

	Budgeted			Actual		
	Jug wine ₹	Premium wine ₹	Total ₹	Jug wine ₹	Premium wine ₹	Total ₹
Sales value	6000	6400	12400	6050	10850	16900

$$\begin{aligned}
 \text{Total Sales Value Variance} &= \text{Actual Sales Value} - \text{Budget Sales Value} \\
 &= 16900 - 12400 \\
 &= ₹ 4500 \text{ Favourable (F = Favourable A = Adverse)}
 \end{aligned}$$

$$\begin{aligned}
 \text{Sales Price Variance} &= (\text{Actual Unit Price} - \text{Budget Unit Price}) \times \text{Actual Qty. in units} \\
 &= (5.50 - 5) \times 1100 + (15.50 - 16) \times 700 \\
 &= 550 \text{ F} + 350 \text{ A} \\
 &= 200 \text{ F}
 \end{aligned}$$

Flexible Budget	Jug wine ₹	Premium wine ₹	Total ₹
Selling price	5	16	
Sales in units	1100	700	
Sales value	5500	11200	16700

Hence, sales price variance can also be calculated by finding out the variance from flexible budget i.e., ₹ 16900 - ₹ 16700 = ₹ 200 Favourable

$$\begin{aligned}
 \text{Sales Volume Variance} &= \text{Budgeted Price} \times \text{Diff. Between Actual Qty. \& Budgeted Quantity} \\
 &= 5 (1100 - 1200) + 16 (700 - 400) \\
 &= 500 \text{ A} + 4800 \text{ F} \\
 &= 4300 \text{ F}
 \end{aligned}$$

Sales volume variance can also be calculated by finding out the difference between flexible budget amounts and static (master) budget amounts =

$$16700 - 12400 = 4300 \text{ F}$$

**Notes** Sales Mix Variance = (Actual Sales Qty. in Actual Mix – Actual Sales Qty. in Budgeted Mix) × Budgeted Price Per Unit

	Actual Sales Qty.	Actual Qty. in Budgeted Mix	
Jug wine	1100	1350	$250 \text{ (A)} \times 5 = 1250 \text{ A}$
Premium Wine	700	450	$250 \text{ (F)} \times 16 = 4000 \text{ F}$
	1800	1800	2750 (F)

It can be calculated by sales value in the flexible budget based on actual sales mix minus sales value in the flexible budget based on budgeted sales mix

$$\begin{aligned} &= 16700 - (1350 \times 5 + 450 \times 16) \\ &= 16700 - 13950 \\ &= 2750 (\text{F}) \end{aligned}$$

Sales Qty. Variance = Budgeted Price per unit of budgeted mix  
 $(\text{Total Actual Quantity} - \text{Total Budget Quantity})$

$$\begin{aligned} &= \frac{12400}{1600} \times (1800 - 1600) \\ &= 1550 (\text{F}) \end{aligned}$$

It can be calculated by the difference between sales value in the flexible budget based on actual sales volume at budgeted sales mix and that amount in static budget based on budgeted selling price

$$\begin{aligned} &= (1350 \times 5 + 450 \times 16) - 12400 \\ &= 13950 - 12400 \\ &= 1550 (\text{F}) \end{aligned}$$

#### 8.2.4 Profit or Sales Margin Method

The purpose of measuring the variances under the method is to identify the effect of changes in sales quantities and selling prices on the profits of the company.



*Notes* The quantity and mix variances should be analysed in conjunction with each other because the sales manager is responsible for both these variances.

There are five distinct variables that can cause actual performance to differ from budgeted performance. They are:

1. Direct substitution of products.
2. Actual quantity of the constituents of sales being different from the budgeted quantity.
3. Actual total quantity being different from budgeted total quantity.
4. Difference between actual and budgeted unit cost.
5. Difference between actual and budgeted unit sale price.

The sales management should consider particularly the interaction of more than one variable in making decisions.

**Notes**



*Example:* Decrease in selling price coupled with favourable product quantity variances may help in assessing the price elasticity of demand.

The computations of sales margin variance are given below:

1. **Total Sales Margin (Value) Variance:** It is the difference between actual margin from sales and budgeted margin (Profit).
2. **Sales Margin Price Variance:**  $(\text{Budgeted Price} - \text{Actual Price}) \times \text{Actual Quantity}$ . The flexible budget revenue variance is explained by changes in unit selling prices.
3. **Sales Margin Volume Variance:** Budgeted Margin per unit  $\times$  difference between actual quantity of sales and budgeted quantity of sales.

It can be measured by the difference between the flexible budget amounts and the static (master) budget amounts, unit selling prices, unit variable costs and fixed costs are held constant.

4. **Sales Margin Mix Variance:** It is that portion of sales margin volume variance which is due to the difference between the quantities of actual sales mix and the budgeted sales mix and can be computed as below:

Sales Margin Mix Variance =  $(\text{Actual Sales Qty. in Actual mix} - \text{Actual Sales Qty. in Budgeted Mix}) \times \text{Budgeted margin per unit for Individual products}$

It is basically the difference between the amount of contribution margin in the flexible budget based on actual sales volume at actual mix and that amount in the flexible budget based on actual sales volume at budgeted mix.

5. **Sales Margin Quantity Variance:** Budget Average Margin Per Unit  $\times$  (Actual Total Quantity - Budgeted Total Quantity)

It is the difference between the amount of contribution margin in the flexible budget based on actual sales volume and budgeted sales mix and that amount in static (master budget).



*Caution* Budgeted selling prices and budgeted unit variable costs are held constant.

## Self Assessment

Fill in the blanks:

3. There are two distinct methods of computing and presenting sales variance, (1)..... (2) Sales margin (Profit) method.
4. .....=Budget Average Margin Per Unit  $\times$  (Actual Total Quantity - Budgeted Total Quantity)

## 8.3 Market Size and Market Share Variances

The performance of the company is also affected by overall demand for the industry products and the company's ability to maintain its share of the market. Statistics for some industries are readily available and so the company can easily monitor its market share.

**Notes**



*Notes* The sales margin quantity variance can be subdivided into the market size variance and the market share variance.

The computations for these two variances are given below:

1. Market Size Variance = (Budgeted Market Share Percentage) × Actual industry sales volume in units – Budgeted industry sales volume in units  
× Budgeted Average contribution margin Per unit
2. Market Share Variance = (Actual market share percentage – Budgeted market share percentage) × Actual industry sales volume in units × Budgeted Average Contribution margin per unit.

**Illustration:** Assume the following budgeted and sales actual data for a month in the example:

	Budgeted		Actual	
	Jug wine ₹	Premium wine ₹	Jug wine ₹	Premium wine ₹
Selling price per unit	5	16	5.50	15.50
Variable cost per unit	4	9	4.30	9.50
Contribution per unit	1	7	1.20	6.00
Sales in units	1200	400	1100	700

Budgeted fixed cost for the month ₹ 3,000 and actual fixed cost ₹ 3050

Assume the following further information:

	Budgeted	Actual
Total market for wine units	20,000	18,000
The company's share of market	8%	10%

Calculate Sales Margin (Value) variance in detail and reconcile the operating income.

**Solution:**

	Jug wine			Premium wine			Total		
	Static (master Budget)	Flexible Budget	Actual	Static (master Budget)	Flexible Budget	Actual	Static (master Budget)	Flexible Budget	Actual
Units sold	1200	1100	1100	400	700	700	1600	1800	1800
Sales in rupees	6000	5500	6050	6400	11200	10850	12400	16700	16900
Variance costs	4800	4400	4730	3600	6300	6650	8400	10700	11380
Contribution margin	1200	1100	1320	2800	4900	4200	4000	6000	5520
Fixed costs							3000	3000	3050
Operating income							1000	3000	2470

**Average**

$$1. \text{ Total Sales Margin (Value) Variance} = \text{Actual Margin} - \text{Budgeted Margin}$$

$$= ₹ 5520 - ₹ 4000$$

$$= ₹ 1520 (\text{F})$$

		Notes
2. Sales Margin Price Variance	= (Budgeted Price - Actual Price) × Actual Quantity = $(5 - 5.50) \times 1100 + (16 - 15.50) \times 700$ = 550 (F) + 350 (A) = 200 F	
3. Sales Margin Volume Variance	= (Actual sales in units - Budgeted sales in unit) × Budgeted Margin/Unit = $(1100 - 1200) \times 1 + (700 - 400) \times 7$ = 2000 (F)	
4. Sales Margin Mix Variance	= (Actual Total Sales Quantity in Actual Mix - Actual total sales quantity in Budgeted mix) × Budgeted Margin/Unit for individual products	

	Actual Total Sales Qty. as per Actual mix		Actual total sales qty. in budgeted mix	Difference
Jug wine	1100	3/4 <sup>th</sup>	1350	$250(A) \times 1 = 250 (A)$
Premium wine	700	1/4 <sup>th</sup>	450	$250 (F) \times 7 = 1750 (F)$
	1800		1800	1500 F

5. Sales Margin Qty. Variance	= Budgeted Average Margin/Unit × (Actual total qty. - Budgeted total qty)  = $\frac{4000}{1600} \times (1800 - 1600)$  = $2.5 \times 200$  = 500 (F)
6. Market Size Variance	= (Budgeted Market Share Percentage) × (Actual industry sales volume - Budgeted industry sales volume) × Budgeted average contribution margin/unit  = $0.08 \times (18000 - 20000) \times 2.50$  = 400 (A)
7. Market Share Variance	= (Actual Market share percentage - Budgeted Market share percentage) × Actual industry sales volume in units × Budgeted Average contribution/unit  = $(0.10 - 0.08) \times 18000 \times 2.50$  = 900 (F)
8. Variable Cost Variance	= Actual Qty. × (Diff. in budgeted and actual cost/unit)  = $1100 \times (4 - 4.30) + 700 \times (9 - 9.50)$  = 330 (A) + 350 (A)

Notes	= 680 (A)
9. Fixed Cost Variance	= Budgeted Fixed Cost – Actual Fixed Cost
	= 3000 – 3050
	= 50 (A)
10. Difference in Operating Income	= 1000 – 2470
	= 1470 (F)

## **Self Assessment**

Fill in the blanks:

5. ..... = (Budgeted Market Share Percentage) × Actual industry sales volume in units – Budgeted industry sales volume in units) × Budgeted Average contribution margin Per unit.
6. Sales Margin Price Variance = (Budgeted Price – Actual Price) × .....

## **8.4 Summary of Variances**

There are several ways in which variances can be summarized in a report.



*Did u know?* The different methods of calculating variances are: time period of comparison, focus on gross margin, evaluation standards, full-cost systems and amount of detail information.

These approaches are described below.

### **Time Period of Comparison**

Some companies use performance for the year to date as the basis for comparison. They use the budgeted and actual amounts for the six months ending June 30, rather than the amounts for the month June. Other companies compare the budget for the whole year. The actual amounts are taken for the first six months and the estimates of revenues and expenses are taken for the next six months.

A comparison of the annual budget with current expectation of actual performance for the whole year shows how closely the business unit manager expects to meet the annual profit target. If the performance for the year to date is worse than the budget for the year to date, the deficit is likely to be overcome in the remaining months. However, the forces that caused the actual performance to be below budget for the year to date are expected to continue for the remaining part of the year, and this is likely to make the final figure significantly different from the budgeted amount.

### **Focus on Gross Margin**

Though selling prices are assumed to be constant throughout the year, in practice, changes in costs and other factors make it difficult to maintain the same selling price. So, the marketing manager must try to achieve a budgeted gross margin, that is, a constant spread between costs and selling prices. To do so, the 'gross margin' variance must be considered. The gross margin is the difference between the actual selling prices and manufacturing costs.

Evaluation Standards	Notes
----------------------	-------

Three types of standards are used for evaluating reports of actual activities: (1) Predetermined standards (2) Historical standards (3) External standards.

#### ***Predetermined Standards***

Predetermined standards (also called budgets) if carefully planned and coordinated can be excellent standards. Most companies compare actual performance against predetermined standards. But if the budgeted numbers are collected in a haphazard manner, this will not provide a reliable basis for comparison.

#### ***Historical Standards***

These are records of past actual performance. Results for the current month are compared with results for the last month or with results for the same month a year ago. There are two disadvantages of using these types of standards: conditions may be different in the two periods (this invalidates the comparison), and the prior periods' performance may not be considered acceptable performance. Despite the inherent weaknesses, these standards are used by companies where valid predetermined standards are not available.

#### ***External Standards***

These standards are derived from the performance of other responsibility centers or of other companies. The performance of one branch sales office may be compared with the performance of other branch sales offices. Such a comparison may provide an acceptable basis for evaluation if the conditions in the responsibility centres are similar.

#### **Full-cost Systems**

In a full-cost system, the manufacturing cost of a product includes both variable costs and fixed costs. Companies under the full-cost system may not be able to make such a separation, or even if they do it, they have to identify the variance in manufacturing costs that results from the difference between actual and standard production volume. A 'production volume variance' is developed when actual volume is different from standard volume.

#### **Amount of Detail Information**

Revenue variances can be analyzed at various levels: in total; then by volume, mix, price; analysis of volume and mix variance is done by industry volume and market share. At each level, the variances of individual products are analyzed. The process of analyzing the variance from one level to another is called "peeling the onion." Similarly, additional 'sales and marketing variances' can be calculated, by 'sales territories,' by 'individual sales persons,' by 'sales originating from direct mail,' by 'customer calls from other resources,' by 'sales to individual countries.' Additional information for manufacturing costs can be developed by calculating variances with specific input factors, such as wage rents and material prices. These layers of variances correspond to the hierarchy of the responsibility center managers.

#### **8.4.1 Limitations of Variance Analysis**

Variance analysis identifies the occurrence of variance, but it does not tell 'why' the variance occurred. When using variance analysis, it is difficult to decide whether a variance is significant

**Notes** or not. Another limitation of variance analysis is that, as the performance reports become aggregated, offsetting variances might mislead the user of the information.



*Example:* A manager might notice that the business unit manufacturing cost performance was as budgeted. However, there may be good performance at one plant which is offsetting poor performance at another plant.

If a variance is significant, but uncontrollable (such as unexpected inflation), there may be no point in investigating it. Performance reports show only what has happened; they do not show the future effects of actions that the manager has taken.



*Example:* Reducing the budget for employee training increases the current profitability, but may result in adverse consequences later.



*Caution* Since variance analysis is limited to those events that are recorded in the accounts, many important effects of those events are not reflected in current accounting transactions.

**Fixed (Static) and Flexible Budget:** Control, in order to be effective, requires a standard or a target with which actual performance can be compared for the purpose of measurement of the results for timely action, if necessary.

If Master Budget is fixed (Static) i.e., it has a single planned volume level and is not adjusted or altered after it is drawn up, regardless of change in volume, cost drivers or other conditions during the budget period.

A flexible budget (as called as variable budget) is a budget that is adjusted for changes in the level of the cost (or revenue) driver. The flexible budget is based on knowledge of how revenue and costs should behave over a range of the driver.

Because actual sales will probably differ from budgeted sales in the master budget, a flexible budget is better simply because it presents more projections of sales and so has a better chance of getting it right. The flexible budget provides the data for studying patterns of behaviours of revenues and costs. These patterns may be of interest to management, but no pattern can emerge from a single column static budget. Flexible budget is a budget that recognises the difference between fixed, variable and semi-variable costs, in relation to the level of activity attained. Fixed expenses are not controllable at the departmental manager's level, such expenses are allowed in total without being factored by the percentage of activity. In case of variable expenses, the expenses will vary in direct proportion to output; allowance will be given in direct proportion to the level of activity attained in respect of such expenses.



*Notes* Semi variable expenses will vary with volume but not in direct proportion because of the incidence of certain fixed elements.



*Task* Take any hypothetical example of your own and calculate any two variances.

**Illustration**
**Notes**

1. Given below the budget for January

	Product A 100		Product B 100		Product C 100		Total Budget
	Unit	Total	Unit	Total	Unit	Total	
Sales	₹ 1.00	₹ 100	₹ 2	₹ 200	₹ 3	₹ 300	₹ 600
Standard Variable Cost							
Material	0.50	50	0.70	70	1.50	150	270
Labour	0.10	10	0.15	15	0.10	10	35
Variable OH	0.20	20	0.25	25	0.20	20	65
	0.80	80	1.10	110	1.80	180	370
Contribution	0.20	20	0.90	90	1.20	120	230

	Product A 100		Product B 100		Product C 100		Total Budget
	Unit	Total	Unit	Total	Unit	Total	
Contribution	0.20	₹ 20	₹ 0.90	90	1.20	120	₹ 230
Fixed Cost							
Fixed OH		25		25		25	75
Selling exp.		17		17		16	50
Admn. exp		8		8		9	25
Total fixed cost		50		50		50	150
Profit before taxes		(30)		(40)		(70)	80

The Performance Report January (₹ 000) are as follows:

	Actual	Budget	Actual better (worse) than budget
Sales	₹ 875	₹ 600	₹ 275
Variable cost of sales	583	370	213
Contribution	292	230	62
Fixed Overhead	75	75	-
<b>Gross Profit</b>	<b>217</b>	<b>155</b>	<b>62</b>
Selling Expense	55	50	(5)
Admn. Expenses	30	25	(5)
Profit before taxes	132	80	52

The actual sales volume and actual sales price are as follows (₹ 000s)

	A	B	C
Actual Sales Volume	100	200	150
Actual price per unit	₹ 0.90	₹ 2.05	₹ 2.50

Further, January production was as follows: Product A 150,000 units; Product B 120,000 units, product C 200,000 units. The variable manufacturing costs incurred in January were 'as follows': Material ₹ 470,000; labour ₹ 65000; variable mfg. Overhead ₹ 90,000/-; actual fixed cost are 'as follows': Fixed overhead ₹ 75,000; selling expense ₹ 55,000; Admin. Expense ₹ 30,000. Prepare analysis of variances.

## Notes

## Solution:

Revenue Variances:

Selling Price variance = Actual volume (Diff. in actual price and standard price)

Product A = 100,000 (1.00 – 0.90) = (10,000) unfavourable

Product B = 200,000 (2.00 – 2.05) = 10,000 Favourable

Product C = 150,000 (3.00 – 2.50) = (75,000) Unfavourable

(75,000) favourable

Sales Mix Variance, Jan (₹ 000)

Product	Budgeted proportion	Budgeted Mix at actual volume	Actual sales	Difference	Unit contribution	Variance
(1)	(2)	(3)	(4)	(5) = (3) – (4)	(6)	(7) = (5) x (6)
A	1/3	150	100	(50)	₹ 0.20	₹ (10)
B	1/3	150	200	50	₹ 0.90	₹ 45
C	1/3	150	150	-		₹ 35
		450	450			35

Sales Volume Variance, January (₹ 000)

Product	Budgeted Mix at Actual Volume	Budgeted Volume	Difference	Unit Contribution	Volume Variance
(1)	(2)	(3)	(4)	(5)	(6)
A	150	100	50	₹ 0.20	₹ 10
B	150	100	50	₹ 0.90	₹ 45
C	150	100	50	₹ 1.20	₹ 60
	450	300	150		₹ 115

Sales Volume Variance, January (₹ 000)

	Actual ₹	Budget ₹	Favourable or unfavourable variances
Fixed overhead	75	75	₹ -
Selling expenses	55	50	(5)
Admin. Expenses	30	25	(5)

Variable Manufacturing Expenses Variances, January (₹ '000)

	Product			Total	Actual	Favourable / unfavourable variance
	A	B	C			
Material	₹ 75	₹ 84	₹ 300	₹ 459	₹ 470	₹ (11)
Labour	15	18	20	53	65	(12)
Overhead (Variable)	30	30	40	100	90	10
	120	132	360	612	625	(13)

<b>Summary Performance Report, January (₹ 000s)</b>	<b>Notes</b>
Actual Profit	132
Budgeted Profit	80
<b>Variance</b>	<b>52</b>
Analysis of Variance – Favourable/(Unfavourable)	
Revenue Variances	
Price	(75)
Max	35
Volume	115
<b>Net volume variance</b>	<b>75</b>
Variable cost variances	
Material	(11)
Labour	(12)
Variable overhead	10
<b>Net Variable Cost Variance</b>	<b>(13)</b>
Fixed Cost variance	
Selling expenses	(5)
Admn. Expenses	(5)
Net Fixed cost variance	(10)
<b>Total Variance</b>	<b>52</b>

## **Self Assessment**

Fill in the blanks:

7. Three types of standards are used for evaluating reports of actual activities: (1) Predetermined standards (2) Historical standards (3) .....
8. A .....is a budget that is adjusted for changes in the level of the cost (or revenue) driver.

**Notes**

Case Study

**Variance Analysis Problem of ABC Company**

In this case, you are asked to analyse the February and March financial performance of the Temple Division of the ABC Company as compared with its budget.

**Part A - February 2007**

Below are the data describing the actual financial results of the Temple Division for the month of February 2007.

Sales	₹. 781
Variable cost of sales	552
<b>Contribution</b>	<b>229</b>
Fixed manufacturing costs	80
<b>Gross Profit</b>	<b>149</b>
Selling expense	57
Administrative expense	33
<b>Net profit</b>	<b>₹ 59</b>

**Sales**

Product	Unit Sales	Price	Sales in Rupees
A	120	₹ 0.95	114
B	130	1.90	247
C	150	2.80	420
<b>Total</b>	<b>400</b>		<b>781</b>

**Production**

Product	Units produced	Manufacturing Cost			
		Material	Labour	Variable Overhead	Total
A	150	80	20	40	140
B	130	91	21	35	147
C	120	190	15	30	235
<b>Total</b>	<b>400</b>	<b>361</b>	<b>56</b>	<b>105</b>	<b>522</b>

	Units (000)
Product A	600
Product B	650
Product C	1500

**Part B - March 2007**

Below are the data describing the actual financial results for the Temple Division for the month of March 2007.

Contd...

**Income Statement**

Sales	₹ 498
Variable cost of sales	278
<b>Contribution</b>	<b>220</b>
Fixed manufacturing costs	70
<b>Gross Profit</b>	<b>150</b>
Selling expense	45
Administrative expense	20
<b>Net profit</b>	<b>₹ 85</b>

**Notes**

**Sales**

Product	Unit Sales	Price	Sales in Rupees
A	90	1.10	99
B	70	2.10	147
C	80	3.15	252
<b>Total</b>	<b>240</b>		<b>498</b>

**Production**

Product	Units produced	Manufacturing Cost			
		Material	Labour	Variable Overhead	Total
A	90	40	8	17	65
B	80	55	10	18	83
C	100	150	8	19	177
<b>Total</b>	<b>270</b>	<b>245</b>	<b>26</b>	<b>54</b>	<b>325</b>

Answer the same questions posed at the end of Part A. The actual cost of sales using full standard costing would be ₹ 340,500 in March.

**Questions**

1. Prepare an analysis of variance from profit budget assuming that the Temple Division employed a variable standard cost accounting system.
2. Prepare an analysis of variance from profit budget assuming that the Temple division used a full standard cost accounting system. Under this assumption, the actual cost of sales amount would be ₹ 632,000. Can you derive this figure?
3. Industry volume figures are presented below. Separate the mix and volume variance into the variance resulting from differences in market penetration and variance resulting from differences in industry volume. Make the calculation for the variable cost system only. (Industry volume, February 2000)

## **8.5 Summary**

- Variance analysis is a part of the process of control and involves the calculation of variance and the interpretation of results so as to localize the different factors that are responsible for the variance.
- There are two distinct methods of computing and presenting sales variance, (1) Sales value or Turnover method and (2) Sales margin (Profit) method.
- The performance of the company is also affected by overall demand for the industry products and the company's ability to maintain its share of the market.

- Notes**
- Variance analysis identifies the occurrence of variance, but it does not tell 'why' the variance occurred. When using variance analysis, it is difficult to decide whether a variance is significant or not.

## **8.6 Keywords**

**Flexible Budget:** A flexible budget (as called as variable budget) is a budget that is adjusted for changes in the level of the cost (or revenue) driver.

**Full-cost Systems:** In a full-cost system, the manufacturing cost of a product includes both variable costs and fixed costs.

**Sales Margin Mix Variance:** It is that portion of sales margin volume variance which is due to the difference between the quantities of actual sales mix and the budgeted sales mix.

**Sales Margin Volume Variance:** Budgeted Margin per unit × difference between actual quantity of sales and budgeted quantity of sales.

**Sales Variance Method:** In this method, the variances are computed on the basis of sales value.

**Total Sales Margin (Value) Variance:** It is the difference between actual margin from sales and budgeted margin (Profit).

## **8.7 Review Questions**

1. Identify which of the four variances - material price, material quantity, labour rate, labour efficiency - would be useful in evaluating the following and explain why?
  - (a) Purchase manager
  - (b) Production manager
  - (c) Personnel manager
2. Comment on the following statements:
  - (a) All variances are bad
  - (b) All variances should be investigated
  - (c) Only unfavourable variances should be investigated.
3. The monthly variance analysis reports have just been released. The assembly line report shows:

Labour mix variance	₹ 26,000 unfavourable
Labour yield variance	₹ 37,400 favourable

The assembly line supervisor states, "I knew we should not have hired all these skilled workers. Look at the horrible labour, mix, variance we generated." Do you agree with the supervisor's assessment? Explain.
4. Discuss the nature and use of contribution margin variance analysis.

### **Answers: Self Assessment**

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| 1. Variance                           | 2. Variance analysis              |
| 3. Sales value or Turnover method and | 4. Sales Margin Quantity Variance |

		<b>Notes</b>
5.	Market Size Variance	
7.	External standards	

## **8.8 Further Readings**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House



*Online links*

<http://hafeezrm.hubpages.com/hub/MANAGEMENT-ACCOUNTING-VARIANCE-ANALYSIS>

<http://www.financialmanagementdevelopment.com/Slides/handouts/213.pdf>

<http://www.accountantnextdoor.com/variance-analysis-meaning-advantages-and-disadvantages/>

Notes

## Unit 9: Performance Measurement Systems

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### Objectives

After studying this unit, you will be able to:

- Identified the performance measures
- Discuss the designing accounting-based performance measures
- Describe the performance reports: format and essential features
- Explain the multiple performance measures
- Establishing the objectives and performance measures
- Explain the benchmarking and benchtrending
- Discuss the just-in-time technique and its influence on management control process
- Describe the computer integrated manufacturing and its influence on management control process

## **Introduction**

## **Notes**

Management Information System can be developed as an act of interrelated components that collect (or retrieve), process, store and distribute information to support decision making, co-ordinate and control an organisation. Information means data have been shaped into a form that is meaningful and useful to human being. Data are stream of raw facts reporting events occurring in organisation or physical environment before they have been organized and rearranged into a form that people can understand and use.

## **9.1 Performance Measures**

Performance measures are a central component of management information and reporting system. It deals with performance measures for different levels of an organisation and for managers at these levels - both financial and non-financial performance measures.

Performance measurements of organisation units should be a prerequisite for allocating resources within that organisation. When a unit undertakes new activities, projections of revenues, costs and investments are made. An ongoing comparison of the actual revenues, costs and investments with the budgeted amounts can help guide top management's decisions about future allocations.



*Did u know?* Performance measurement of manager is used in decisions about their salaries, bonus, future assignments and status, which motivate managers to strive for the goals used in their evaluations.

### **9.1.1 Five Level Performance Measures**

These are given below:

<b>Representative area at which data gathered</b>	<b>Financial Measures</b>	<b>Non-Financial Measures</b>
A) Customer / Market level	i) Prices of company's products compared with competition ii) Prices of company's traded securities	i) Market share held by company's products ii) Third party quality ratings for all products in the industry
B) Total organizational level	i) Return on investment (ROI) ii) Residual income (RI)/EVA iii) Return on sales Cost and revenue measurements for each responsibility centre according to measure of performance used (that is cost, revenue, profit, and return on investments) this is known as responsibility accounting. Financial measures includes flexible budget variances)	i) No. of new products introduced ii) No. of new patents filed
C) Individual facility level (includes manufacturing plants, distribution sales, customer service centers, R & D center)		i) Capacity utilization ii) Throughput time for products iii) Percentage of times promised delivery dates met (schedule attainment)

*Contd...*

<b>Notes</b>	<p>D) Individual Activity level (e.g. activities in a warehouse facility include receiving, storing, dispatching, etc.</p>	<p>i) Direct material variance and direct labour variances ii) Manufacturing overhead variances iii) Cost per activity level</p>	<p>i) Time taken to set up machinery for new production run. ii) No. of accounts receivables processed per hour iii) Inventory level not to exceed certain amounts iv) Abiding by Plant Maintenance schedules. Time period for completion i.e., break even time is the time from initial idea date to the time when the cumulative present value of cash inflows of the project equals the present value of total (to market) cash outflows</p>
	<p>E) By Product / Programme</p>	<p>Cost and Revenues and Investments across responsibility centers as far as they pertain to program or product (compares to budgeted / target amounts). This is sometimes referred to as activity costing.</p>	

### Self Assessment

Fill in the blanks:

1. .... means data have been shaped into a form that is meaningful and useful to human being.
2. .... are a central component of management information and reporting system.

### **9.2 Performance Reports: Format and Essential Features**

1. ***Tailored to the organization structure and controllability:*** The performance report system should be structured to the organization structure of the enterprise the same way as budgeting and accounting systems. There should be a separate performance report for each responsibility centre, starting with those at the lowest level, which, in turn, feed into summary reports for each higher level.
2. ***Designed to implement the exception principle in management:*** Performance report must clearly distinguish between controllable and non-controllable items. Performance measurement required that actual results be compared with plans, objectives and standards so that differences (exceptions) call management attention to high, low and satisfactory performance. The variances from plans signal the need for investigation and possible action. The action may be corrective, commendatory or provisory. Both favourable and unfavourable variances justify investigation. Unfavourable variances may signal danger further investigation generally is necessary to pinpoint the precise cause.
3. ***Repetitive and relate to short-time spans:*** Performance should be repetitive, generally on a monthly basis, although certain problems may suggest the need for weekly or even daily reports that focus on a particular problem.

4. **Adapted to the requirements of the principal user:** Performance reports serve the evaluation and decision making needs of the user.
- Notes
- (a) Top management must have reports that give a complete and readily comprehensive summary of the overall aspects of operations and an identification of major events. The summaries must be supported by sufficient detail to facilitate tracing unfavourable situation to their source.
  - (b) Middle management is usually defined as those members of management in charge of major subdivisions of the business such as: sales, production and finance. Middle management is responsible for carrying out the responsibilities assigned to the subdivisions within the broad policies and objectives established by top management. Performance reports for middle management, although including summary data, also are characterized by detailed data on day-to-day operations.
  - (c) Lower level management (supervisors and foreman) is principally concerned with co-ordination and control of day-to-day operations; therefore controlled reports must be designed accordingly. Reports to the foreman and supervisors must be detailed, simple, understandable and limited to items having a direct bearing on the supervisor's operational responsibilities.

The presentation media for financial data may be broadly classified as follows:

- |               |  |
|---------------|--|
| (i) Written:  | (a) Formal financial statements          |
|               | (b) Tabulated statistics                 |
|               | (c) Narration and exposition using words |
| (ii) Graphic: | (a) Charts                               |
|               | (b) Diagrams and pictures                |
| (iii) Oral:   | (a) Group meetings                       |
|               | (b) Conferences with individuals         |

Many top executives have a strong preference for narrative summaries of internal reports. Words frequently tell the story much more effectively than base figures. Analysis of the causative factors involved.



*Example:* In a performance report showing significant exceptions, generally should be presented in narrative form.

Oral presentation should be a significant part of the internal reporting system in all companies. Controller and budget directors should encourage the use of executive conferences where the performance report is presented, explained and discussed. Oral presentation is important because interpretation and emphasis are possible that are lacking in other forms.

5. **Simple, understandable and report only essential information:** Reports should not be too long; complex tabulations should be avoided. Reports should be carefully screened to eliminate all non-essential information. Many performance reports include too much data rather than too little.

Performance reports should be standardized. Executive becomes accustomed to certain terminology, forms and methods of presentation and know where to look to find the specific information. Despite the desirability of standardizing performance reports,

- Notes**
- constant attention must be given to improving them. Improvement necessarily involves changes, but desirable changes, if made at an opportune time and adequately presented, can be accomplished usually with a minimum of confusion. Reports must be kept relevant.
6. ***Prepared and presented promptly:*** Consistent with the cost of detailed record keeping and reporting, performance reports should be available on a timely basis. To achieve a realistic balance between immediate reporting and the costs of detailed reporting, monthly performance reports are widely used by industry. When special problem areas are involved, weekly and even daily reporting may be necessary, at least for a time.
  7. ***Effective management follow-up procedures:*** Follow up procedures constitute a key aspect of effective control. Some companies require written explanations of significant variances. The follow up procedures preferred by other companies involve constructive conferences where the causes are discussed and correction action is decided upon. Follow-up procedures should begin at the top management level in the executive committee meeting, for example, where both unsatisfactory and satisfactory conditions are discussed and analyzed. Decisions should be made concerning ways and means of correcting unsatisfactory conditions. Favourable variances should be accorded equivalent study: (1) to determine whether the goals were realistic and (2) to give recognition to those responsible for high performances, and (3) possibly to transfer some "know-how" to other subdivisions of the company.
- Group and individual conference should be held at various management levels for effective correction action. Follow-up procedures should embody constructive action to correct unfavourable conditions rather than punitive action for failures, the results of which obviously cannot be erased. Another important aspect of follow-up procedure is that the resulting action is strictly a line responsibility rather than a staff responsibility. The budget director, controller or other staff officer should not undertake nor be assigned, the responsibility of enforcing the budget.

### **The Integrated Performance Report – An Illustration**

A comprehensive performance report for Production Department X in S Company is shown below, from which following features are worth noting:

1. Identification of responsibility
2. Distinction between controllable and non-controllable items
3. Specific time dimensions - month and cumulative to date
4. Method of reporting variances
5. Adjustment of the "planned" amounts to actual output (that is flexible/variable budget approach).
6. Detail on each category (including service usage in units) and
7. Explanatory comments and suggestions

Department Performance Report  
 S Company Performance Report

Notes

Dept. Prod. Dept. X Current Month - January					Responsibility of Year to date	
Actual	Planned	Var. Amt.	%	Description Controllable	Actual Planned	Variance Amount %
87,500	1,00,000	12,500*	13*	Dept. output in units		
				<b>Raw Material A:</b>		
1,76,000	1,75,000	1,000*	1*	Units		
32,200	35,000	200*	1*	Cost		
				<b>Direct Labour:</b>		
35,357	35,000	357*	1*	Hours		
₹ 1.96	₹ 2.00	₹ 0.04	2	Avg. wage rate		
69,300	70,000	700	1	Cost		
10,000	10,000	-	-	Salaries		
3,740	3,800	60	2	Indirect materials		
7,550	7,250	300	4*	Indirect labour		
560	1,000	440	44	Miscellaneous		
<b>21,850</b>	<b>22,050</b>	<b>200</b>	<b>1</b>	<b>Sub-total</b>		
530	480	50*	10*	Service Usage: Kilowatt hours (000's)		
72	60	12*	20*	Direct repair hours		
<b>1,26,350</b>	<b>1,27,050</b>	<b>700</b>	<b>1</b>	<b>Grand total</b>		
2,000	2,000	-	-	<b>Non-Controllable</b>		
500	500	-	-	Depreciation		
200	200	-	-	Insurance		
2,700	<b>2,700</b>	-	-	Taxes		
				<b>Total non controllable</b>		

\* Unfavourable variances

**Comments:**

- Output was 13% below the planned level due to production scheduling pull back to accommodate 5000 unit unfavourable sales volume variance; the department met its production schedule as adjusted.
- Unfavourable variances in service usage should be carefully investigated to determine underlying causes.

To have the maximum benefit, the monthly report should be designed to indicate the performance of each individual having supervisory responsibility. A well-designed control report should be completely integrated i.e., each schedule should look on a responsibility basis so that (i) major variation may be traced to the source of the problem, and (ii) the various segments comprise within themselves a complete report. Please, refer to the illustration above. Performance reports SP manufacturing company.

Distribution of the monthly performance report (and its segments) should follow essentially the same pattern as the annual profit budget plan. Certain executives need the complete monthly performance report. Other members of the management only need those schedules related to their particular responsibility centers. Lower levels of management may receive only one of the detailed segments. On the other hand, the higher the level of management, the greater the need for summaries, yet these summaries must be supported by adequate detail to identify the particular aspects of operations.

**Notes**

**Self Assessment**

Fill in the blanks:

3. ..... is usually defined as those members of management in charge of major subdivisions of the business such as: sales, production and finance.
4. ..... is principally concerned with co-ordination and control of day-to-day operations.

### **9.3 Multiple Performance Measures**

ROI and EVA have been employed with some success by many large sized undertaking which has resorted to divisionalisation. However, exclusive reliance on a single profitability measure may lead to manipulation of the system and consequent distortion in decision-making. Managers of business unit may delay a potentially profitable investment in a bid to enhance short-term return on income at the cost of long-run consequences.

In order to overcome the limitation of "sole dependence in a single measure", many firms have developed multiple goal structures.

As for example, following are the multiple goal structures of General Electric Company: (i) Profitability, (ii) Market position, (iii) Productivity, (iv) Product leadership, (v) Personnel development, (vi) Employee attitudes, (vii) Public responsibility, (viii) Balance between long-range and short-range goals.

The above multiple goal structures reveal the following:

1. Some of the goals are amenable to reasonably objective quantitative measurement while others are not.



*Example:* Profitability and productivity can be reasonably measured whereas employee attitude and public responsibility are not easily quantifiable.

2. There is some internal inconsistency among the goals e.g. efforts to raise productivity may dampen employee morale. Efforts to fulfil somewhat internally inconsistent and inadequately articulated goals can be frustrating and confusing. The optimum balance may be hard to establish.

#### **9.3.1 Balanced Score Card**

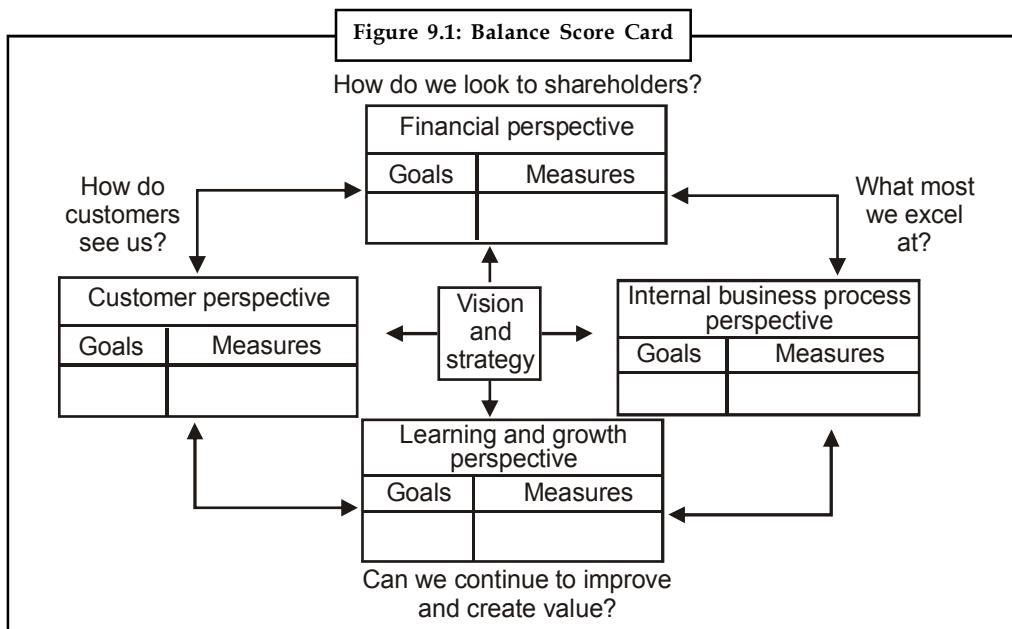
It is a device of linking financial and non-financial measures and identifies key performance measures that give top management, a first but comprehensive view of the performance of the organization unit (i.e., a division/strategic business unit).



*Did u know?* The aim of the score card is to provide a comprehensive framework for translating a company's strategic objectives into a coherent act of performance measures.

The balance score card was devised by Kaplan and Norton (1992) and refined in later publications.

Notes



It allows managers to look at the business from four different prospects by seeking to provide answers to the following four basic questions:

1. How do customers see us? (Customer perspective)
2. What must be excelled at? (Internal business process perspective)
3. Can we continue to improve and create value? (Learning and growth perspective)
4. How do we look to shareholders? (Financial perspective)

In order to minimize information overload, the number of measures in each of the boxes to be restricted to three to five measures.

The measurement focus of the score card is to accomplish the following critical management procedure:

1. Clarifying and translating vision and strategy into specific strategic objectives and identifying the critical drivers of the strategic objectives.
2. Communicating and linking strategic objectives and measures. Once all the employees understand the high level objectives and measures, they should establish local objectives that support the business unit global strategy.
3. Planning, setting targets and aligning strategic initiative, such targets should be over 3 - 5 years period broken down on a yearly basis so that progression targets can be set for assessing the progress that is being made towards achieving the longer term targets.
4. Enhancing strategic feedback and learning so that managers may monitor and adjust the implementation of their strategy and if necessary, make fundamental changes to the strategy itself.

## Self Assessment

Fill in the blanks:

5. ..... is the amount in rupees that remains after deducting an "implied" interest charge from operating income.

- Notes**
6. In order to overcome the limitation of "sole dependence in a single measure", many firms have developed ..... goal structures.

## **9.4 Establishing Objectives and Performance Measures**

### **The Financial Perspective**

*AT SBU Level:* Operating Profit, Return on Investment, Residual Income, and Economic Value Added are used for measuring the financial objective of the business unit.

Other financial objectives include revenue growth, cost reduction and asset utilization.

*Customer perspective:* Market share: It can be measured in terms of sales revenues, unit sales volume or the number of customers. It is a measure of market penetration.

Customer retention and loyalty:

1. In terms of average duration of a customer relationship
2. Number of new customers referred by existing customers

Customer acquisition: can be measured by:

1. Number of new customers
2. Total sales to new customers in the desired market segment
3. Use of 'mystery shoppers' i.e., external agencies sampling the service as customers and formally reporting back on their findings.

Customer satisfaction:

1. Examination of letters of complaint.
2. Feedback from sales representatives.
3. Use of 'mystery shoppers' i.e., External agencies sampling the service as customers and formally reporting back on their findings.

Customer profitability:

1. Profitability should be analyzed by different customer segments and unprofitable segments analyzed.
2. Newly acquired customers may initially be unprofitable and life-cycle profitability analysis should be used for determining whether the focus should be on retention or on abandoning them.

*Measuring value propositions:* Value propositions may be defined as the attributes, the supplying companies provide through their products and services to create loyalty and satisfaction in targeted customer segments. The attributes fall into three categories:

1. Product/service attributes – desirable product/service facilities, price and quality
2. Customer relationship includes the delivery of the product or service to the customer, including the response and delivery time and how the customer feels of the buying experience
3. Image and reputation i.e., intangible factors that attract a customer to a company.

### **9.4.1 Internal Business Perspective**

**Notes**

#### **Innovation Process**

1. Percentage of sales from new products
2. New product introduction vs. customers and vs. plan
3. Time to develop new generation of products
4. Number of key items in which the company is first or second in the market
5. Break-even time i.e., time from the beginning of product development till the time the product is introduced and generated enough profit to payback the original investment made.

#### **Operation Process**

**Financial Measures:** Standard costs, budgets and variance analysis

**Non-financial Measures:** Cycle time, quality measures, cost measures of the internal business processes through activity based costing

**Post-service sales process:** Warranty and repair activities, the treatment of defects and returns, and the process and administration of customer payments.

### **9.4.2 Learning and Growth Perspective**

Employee Capabilities (i.e., employee satisfaction, employee retention and employee productivity): (i) Annual percentage of key staff that leave, (ii) Measures for measuring employee productivity i.e., sales revenue per employee, (iii) Periodically measuring employee's satisfaction using surveys.

Information system capabilities:

1. Percentage of processes with real time, quality, cycle time and cost feedback available,
2. Percentage of customer, facing employees, having online information about customers.

Motivation, empowerment and alignment:

1. The numbers of suggested improvements per employee
2. The percentage of employees with personal goals aligned to the balance score card and the % of employees who achieved personal goals.

**Performance measurement in service organization:** There are four unique characteristics, distinguishing service companies from manufacturing organizations:

1. Most of the services are intangible
2. Services output vary from day-to-day since services tend to be provided by individuals whose performance is subject to variability that significantly affects the service quality, the customer receives
3. The production and consumption of many services are inseparable such as, rail journey
4. Services are perishable and cannot be stored.

- Notes** Companies used the following methods to measure performance:
1. Measure of satisfaction after the services e.g. used questionnaire to ascertain the customer perception of service quality.
  2. Measures during the service e.g. management's unannounced visits, use of 'mystery shoppers'.
  3. Tangibles as surrogates for intangible e.g. measurement of waiting time and the conditions of the waiting environments as surrogates of customers' satisfaction with the service.

In developing an overall framework for a performance measurement system in the service sector, there is need to conserve three basic questions, when forming the basic building blocks of a performance measurement system:

1. What are the dimensions of performance that the organization is seeking to encourage?
2. How are the appropriate standards to be set?
3. What rewards and/or penalties are to be associated with the achievement of performance targets?

**Box 9.1: Dimensions of Performance Measurement**

	<b>Dimensions of Performance</b>	<b>Types of Measures</b>
Results	Competitiveness	Relative market share and position Sales growth Measures of the customer base
	Financial performance	Profitability Liquidity Capital structure Market ratios
	Quality of service	Reliability Responsiveness Aesthetic/appearance Cleanliness/tidiness Comfort
Determinants		Friendliness Communication Courtesy Competence Access Availability Security
	Flexibility	Volume flexibility Delivery speed flexibility Specification flexibility
	Resource utilization	Productivity Efficiency
	Innovation	Performance of the innovation process Performance of individual innovations

**Note:**

1. Competitiveness and financial performance reflect the success of the chosen strategy (i.e., ends or results)
2. The remaining four dimensions: quality, flexibility, resource utilization and innovations are the drivers or dimensions that determine competitive success.

**Self Assessment****Notes**

Fill in the blanks:

7. .... can be measured in terms of sales revenues, unit sales volume or the number of customers.
8. .... may be defined as the attributes, the supplying companies provide through their products and services to create loyalty and satisfaction in targeted customer segments.

## **9.5 Benchmarking and Bench Trending**

Benchmarking is a continuous process of comparing products and operations with the strongest competitors or the best practices in similar operations of the best performing company. Benchmarking is a process that is in contrast to the traditional method of establishing current goals based upon past performance of the organization. Target costing is a specific form of benchmarking applied to product costs.

The benchmarking consists of four subprocesses:

1. Planning the variables to be benchmarked and selecting the companies that are to be used for comparison and methods used to collect comparative data on these companies: The first thing is to decide the benchmarking variables such as: products manufactured, services provided, products or services purchased, processes used, major costs variables, etc. The next step is to identify the targeted companies such as: competitors, identical functions in the same company or similar functions in companies out of the industry. Firms with the best practices can be identified through internal and external sources, including built-up databases, professional associations, industry studies, journals, trade publications, consultants, contacts, seminars, vendors and company sponsored surveys.
2. Establish the current and projected gap in performance between the targets, company's operations and internal operations: The purpose of analysis phase is to determine the current gap in performance between current internal operations and best practices and to project the likely future gap if nothing is done. Best practices can be established based on clear superiority, expert judgement or repeated occurrences of best practices in many situations. It is important to project the likely future gap, since practices change over time.

The benchmarking studies usually provide useful information about the gaps in competitiveness for an operation or process. Bench trading studies include a projection of the critical market and customer structural variables such as: identification of customer preference, innovation threats, new entrants, geopolitical impacts and other market variables critical to the long-term success for the firm. The techniques associated with bench trending is similar to benchmarking but with a new structural dimensions. Management should decide when the extra effort required to perform bench trending is advantageous.

3. Communicating benchmark findings to operating personnel and establishing internal goals for implementation: The gap may be closed by two types of actions: Strategic actions and continuous operating actions. Specific goals with proper time frame must be set for closing it and proper communication to all concerned marketing, new business development, business management, engineering, manufacturing management and controller.

- Notes**
4. Developing implementation plans: Action plans are programs designed to attain the goals. Teams are established, tasks are specified and sequenced, resources are applied, responsibilities assigned, schedules established, and results monitored. The normal project control process is established for major goals. Benchmarked goals can be implemented either through the line organization or through specifically organized project teams. When cross-functional business processes are being benchmarked, cross functional teams are the most useful organization form.

## **9.6 Just-in-Time Technique and its Influence on Management Control Process**

Just-in-time, as the name indicates, means at the extreme there are zero inventories, and goods are produced or ordered only when they are needed. The extreme case is not common but term is catchy way of stating the direction.

The following are just-in-time techniques used:

1. ***Reducing buffer inventory at each workstation:*** Buffer inventory exists partly because workstations break down and partly because they produce defective products. When these events occur production in the following workstation stops unless there is inventory that they can draw. Steps to reduce/minimize machine breakdown and improve quality will reduce the keeping of buffer inventory. Buffer inventory also results from bottlenecks i.e., slower work in some workstations. This can be eliminated by balancing the output of several workstations.
2. ***Decrease set up costs:*** With numerically controlled machine tools, set up involves simply inserting a new computer program in a machine. Thus, after the computer program has been created, the cost of setting up for the next and all subsequent lots is trivial.
3. ***Decrease procurement costs:*** Instead of going through the lengthy process of request bids from vendors, analyzing bids, placing order with the best vendor, and receiving and inspecting the incoming goods, some companies have established relationships with one or two vendors for each time and they want the vendor to deliver quality goods at specific date.
4. ***Relation with customers:*** The other side of the coin is to establish relationship with customers for automatic ordering.

The following are the implications for management control:

1. WIP inventory becomes so insignificant that it can be disregarded. The only inventories are for raw materials and finished goods and issue from raw materials inventory are charged directly to finished goods inventory. In effect, a job-cost system is transformed into process-cost system. With only one cost centre and the tedious task of calculating "equivalent production" (which is necessary to find WII amounts when the inventory in a cost centre consists of partially completed products) is eliminated, resulting in considerable reduction in record-keeping. Products are carried in inventory as standard costs without tracing actual costs to individual products/batches of products.
2. It focuses management attention on time in addition to cost. One of the effective ways to monitor progress is to compute the following ratio by setting targets. Best results can be obtained by emphasizing continuous improvement in this ratio towards the ideal number of 1, since only processing time adds value to the product.

$$\frac{\text{Processing time}}{\text{Cycle time}} = \frac{\text{Processing time}}{\text{Processing time} + \text{Storage time} + \text{Movement time} + \text{Inspection time}}$$

## **Self Assessment**

## **Notes**

Fill in the blanks:

9. .... is a continuous process of comparing products and operations with the strongest competitors or the best practices in similar operations of the best performing company.
10. .... means at the extreme there are zero inventories, and goods are produced or ordered only when they are needed.

## **9.7 Computer Integrated Manufacturing and its Influence on Management Control Process**

In petroleum refineries, chemical processing and similar processing plants, materials and energy enter at the start and as various stages of the process and the finished products come out at the end without any involvement of manpower. Human beings maintain the equipment, check the quality of the process, and if it goes out of control, shut it down and bring it back into control. Similarly, product control systems in other industries also have undergone sea change that have now come very close to those found in process manufacturing. These developments include numerically-controlled machine tools, robots and computers that integrate the work of other computers. This has resulted in the reduction of manpower involvement, reduction in paperwork, elimination of duplicate record keeping, inconsistencies of data in separate systems, decrease in inventory, decrease in throughput time and consequent reduction in production costs.

Complicated, expensive computer systems are now used to link together various stages of production such as Manufacturing Resource Planning II (MRPII), Flexible Manufacturing System (FMS), Manufacturing Accounting and Production Information Control Systems (MAPICS II), Manufacturing Resource Planning and Execution System (MRPX) and Computer Aided Manufacturing (CAMI). These systems incorporate into a single system all or at least several of the formerly separate systems for product design, order processing, accounts receivable, payroll, accounts payable, inventory control, bills of materials, capacity planning, product scheduling and product cost accounting.

The following are the implications of management control process:

1. ***Increase in task control:*** Fully developed system converts certain production activities that once required management control into task control.
2. ***Better information:*** The system provides information more accurately more consistently, with more detail and at much less cost than the systems they supersede.
3. ***More prompt information:*** Information is available shortly after the event occurs; in some cases, practically instantaneously.
4. ***Work teams:*** Under the newer systems, performance focuses on the performance of the whole team.
5. ***Business unit controller:*** One consequence of the team approach is that business unit controller should be made primarily responsible for assisting the business unit manager in planning and controlling the units' operations.



*Task* Discuss the performance reporting at various levels of management. Give examples of some reports.

Notes

## **9.8 Summary**

- Performance measures are a central component of management information and reporting system.
- In a revenue centre, revenues are measured in monetary terms, but expenses are not matched with these revenues. Branch sales offices often are revenue centres.
- The performance report system should be structured to the organization structure of the enterprise the same way as budgeting and accounting systems.
- Just-in-time, as the name indicates, means at the extreme there are zero inventories, and goods are produced or ordered only when they are needed.

## **9.9 Keywords**

***Balanced Score Card:*** It is a device of linking financial and non-financial measures and identifies key performance measures that give top management, a first but comprehensive view of the performance of the organization unit.

***Economic Value Added (EVA):*** Economic Value Added (EVA) is the amount in rupees that remains after deducting an "implied" interest charge from operating income.

***Implied Interest Charge:*** The implied interest charge reflects an opportunity cost, and is charged on the amount of assets in each investment centre.

***Just-in-time:*** Just-in-time means at the extreme there are zero inventories, and goods are produced or ordered only when they are needed.

***Performance Measures:*** Performance measures are a central component of management information and reporting system.

***Value Propositions:*** Value propositions may be defined as the attributes, the supplying companies provide through their products and services to create loyalty and satisfaction in targeted customer segments.

## **9.10 Review Questions**

1. Why is performance measurement required in Management Control System?
2. What are the financial performance measures?
3. What are the non-financial performance measures?
4. What are the information relationships at various levels of management?
5. How can accounting based performance measure be designed?
6. How just-in-time technique influences Management Control Process?
7. How does Computer Integrated Manufacturing influence Management Control Process?
8. What is benchmarking and benchtrending? Describe the process in benchmarking.
9. Explain with the help of diagram the Balance Score Card. Explain, why it is called a Balance Score Card and what are its limitations.

## **Answers: Self Assessment**

### **Notes**

- |                               |                           |
|-------------------------------|---------------------------|
| 1. Information                | 2. Performance measures   |
| 3. Middle management          | 4. Lower level management |
| 5. Economic Value Added (EVA) | 6. Multiple               |
| 7. Market share               | 8. Value propositions     |
| 9. Benchmarking               | 10. Just-in-time          |

## **9.11 Further Readings**



### *Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House.



### *Online links*

[http://www.1000ventures.com/business\\_guide/mgmt\\_measurement-system.html](http://www.1000ventures.com/business_guide/mgmt_measurement-system.html)

<http://www.bpir.com/what-is-performance-measurement-bpir.com.html>

<http://www.orau.gov/pbm/pbmhandbook/volume%202.pdf>

## Unit 10: Interactive Control

### **CONTENTS**

- Objectives
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  - 10.4.3 Informal Control Process
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- 10.6 Summary
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- 10.8 Review Questions
- 10.9 Further Readings

### Objectives

After studying this unit, you will be able to:

- Discuss interactive control system
- Explain contributing theories of management control systems

### Introduction

Today an entrepreneur must have in hand a system of control which together manages all your needs for a stable, fast and profitable.

Based on the current context of demands and computerization, interactive control system is an application based on the needs of an entrepreneur to better control data input, output and stock. Managing the tension between creative innovation and predictable goal achievement is the essence of management control. Control of an undertaking consists of seeing that everything is being carried out in accordance with the plan which has been adopted, the orders which have been given, and the principles which have been laid down. Its object is to point out mistakes in order that they may be rectified and prevented from recurring. Management control is a systematic effort by business management to compare performance to predetermined standards, plans, or objectives in order to determine whether performance is in line with these standards and presumably in order to take any remedial action required to see that human and other corporate resources are being used in the most effective and efficient way possible in achieving corporate objectives.

## **10.1 Interactive Control System**

Notes

Organisation should add Interactive Control System to manage the network between people, teams, customers and suppliers.



*Notes* In managing the interaction between players in the network, one should identify gaps to be improved (e.g. customer preferences, innovation, etc).

Furthermore, the company is advised to influence direction of interaction and learning among teams/persons and across firms.



*Caution* Organisation is advised to perform a Social Network Analysis and make them interactive.

In the network below, groups of four or five interact among themselves and between team leaders within the company. The customer-lines allow coordinating teams to interact with customers and suppliers continuously. The interaction is the two way process where information is shared between the participating members in the network where learning is achieved. In the value chain, from customer call-ins to manufacturing processes to the end of product, these players continuously interact and hence SNA (Social Network Analysis) and interactive control systems are necessary.

### **10.1.1 Conditions**

- ***Training/Leadership Skills:*** In this kind of network, training is required to increase leadership skills. Leaders and all the employees who assume 8 leadership roles will empathies, collaborate, motivate, communicate and influence one another for effectiveness and efficiency. Furthermore, the rotation of leaders within the team enables all the respective employees to understand what is required from a team leader and respect the leader decisions.
- ***Communication and Information Channels:*** This network analysis requires clear communication and information channels in identifying core informal roles in the organisation (i.e. personnel that informally possesses a unique and core network essential for the organisation to function).

### **Self Assessment**

Fill in the blanks:

1. In..... kind of network, training is required to increase leadership skills.
2. Organisation should add ..... to manage the network between people, teams, customers and suppliers.

## **10.2 The Cybernetic Paradigm and the Control Process**

This is also referred to as micro control framework, since it helps us to establish controls or performance measures for a particular problem area in a specific situation.

**Notes** “Cybernetics” is derived from the Greek work “Kybernatikos” which means “Steersman”. A Steersman is a person who directs or governs a ship and corrects deviations from planned course as they occur.

Cybernetics has been defined as the “service of communication and control.” The term cybernetics was coined by Norbert Weiner and it aims at the study of the entire field of control and communication theory, whether in the machines or the animal and has been extensively used in control system engineering and in biology.



*Did u know?* “Cybernetics” as a biological phenomenon, has been defined as “how systems regulate themselves, reproduce themselves, explore and learn.”

The fundamental concern of cybernetics is with negative feedback and the role of negative feedback mechanism to explain purposive and adoptive behaviour. This aspect of cybernetics has relevance for the financial and economic control of business and other organizational ethics.

The particular version of the paradigm developed by Griesinger (1979) (Griesinger, Donald W. Management Theory - A Cybernetic Perspective, Graduate Management Centre Jan. 86) captures all the elements of the control process, which may be enumerated as follows:

1. Set goals and performance measures
2. Measure achievement
3. Compare achievement with goals
4. Compute the variances as the result of the proceeding comparison
5. Reporting the variances
6. Determine the cause of the variances
7. Take action to eliminate the variances
8. Follow up to ensure that goals are met

These eight elements of the control process are captured in the cybernetic paradigm. The process operates as follows:

Each sub-unit or responsibility centre of the organization operates within an environment. The environment includes the “outside world” (i.e., the external environment) as well as other organizational units internal to the firm (i.e. the internal environment).



*Caution* Each responsibility centre must be responsive to changes in the external environment as well as to the goals, strategies, policies, decisions and managerial styles of its superior responsibility center (i.e., its internal environment).

Each manager of an organizational unit scans the environment either formally or informally, so as to absorb information or feedback pertaining to its state-of-affairs. The manager comes into contact with the environment through the sensors i.e., the mechanism used by managers to collect data, e.g. formal reports as well as informal report that comes to the attention of the manager through his or her sense of hearing and seeing. The sensors collect data on the changes occurring in the external environment as well as the internal performance of the responsibility center.

Through the information obtained, the manager constructs certain beliefs concerning performance as well as the state of the external environment. These beliefs are referred to as factual premises. Factual premises are formed by passing these data through a cognitive process referred to as perception. The word 'perception' is used to refer to the psychological process of extracting information from data and interpreting the meaning of that information. Cognitive limitations prohibit decision-makers from collecting all data in the environment.

**Notes**

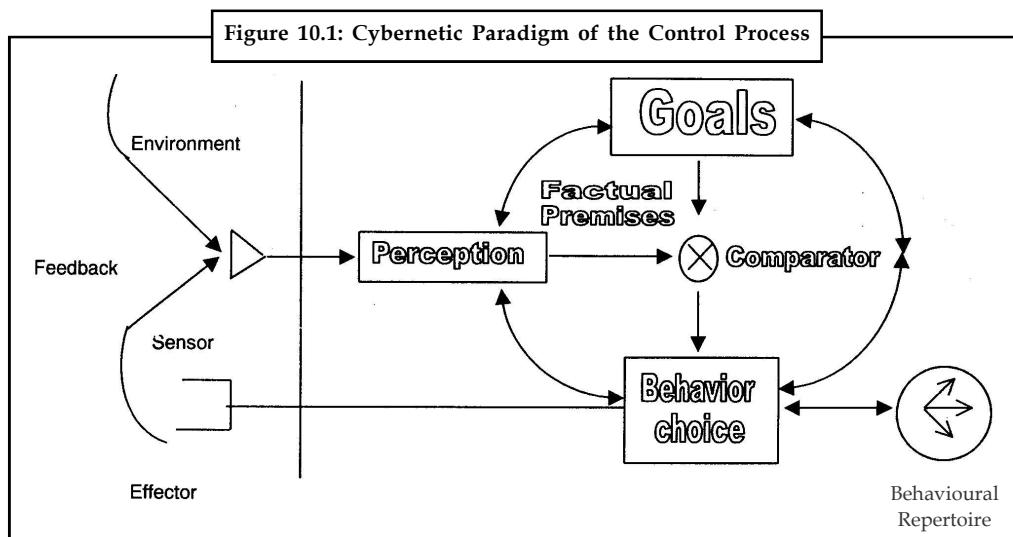
The manager uses the factual premises and compares (a process known as comparator) with organizational goals and performance measures. When difference is found between what decision-makers desire (i.e. value premises) and their beliefs about the environment (i.e. factual premises), they are motivated to search for a set of alternatives (a process known as behavioural repertoire) to close the gap.

Alternative solutions are evoked from the behavioural repertoire according to established or learned search procedures. The alternatives are selected that meet general budget and return constraints. The alternative with the highest subjective expected utility that closes the gap will be chosen. In case no alternative is expected to reduce or close the gap, the decision-maker will expand the search process. The search process is motivated by the presence of a gap and will stop when a feasible alternative is found that will close the gap. This decision-making procedure is termed as satisfying.

Decisions require implementation. The effector, a manager activates the decision, thus serving as a change agent. Control is brought about by action taken by the manager, who seeks to determine the effect of the action, which is known as feedback. If new behaviour leads to a reduction or elimination of the gap, the behaviour is likely to be repeated in the future under similar circumstances. If goals are being met routinely, it is likely that the organization will eventually, seek higher levels of performance.



**Notes** Feedback has the long-term effect of activating learning in the organization. Goals and performance measures adapt to actual performance.



Search and decision rules adapt to experience, with those found most effective will be used in the future and those found least effective will be dropped from the behavioural repertoire.

<b>Notes</b>	In the event, the goals are not achieved; the manager will repeat the process. If after repeated attempt, goals are not achieved, the manager will either alter the performance measures or reduce his goals. In either case, the performance gap is ultimately closed.
--------------	---

### **Self Assessment**

Fill in the blanks:

3. .... has been defined as the "service of communication and control."
4. .... has the long-term effect of activating learning in the organization.

### **10.3 Designing Management Controls**

All goal-oriented controls should reflect the basic elements of cybernetic paradigm. But there are many subtleties to observe in designing effective performance measures i.e., designing individual controls for an activity. These are being discussed below:

1. The process of establishing control should be established as a constructive exercise not a punitive one. Use of controls should be to assist people in attaining goals and objectives for which they are responsible. Controls will be viewed by all participants as 'fair', important indicators of the real purpose of the activity, and 'constructive' as to help people in achieving the purpose of the activity. Standards should be challenging but attainable. Support for the control should exist in the informal organization, especially among informal leaders.
2. Objectives should be expressed in measurable terms whenever possible.
3. Control should focus upon the objectives and key results of an activity and should be limited in number.
4. In establishing controls, we should seek to establish balance among the various aspects of the activity being controlled.
5. A single individual should be assigned responsibility for achieving desired results for an objective.
6. True control is achieved as a result of comparing projected performance regarding an objective to desired results. Comparing actual performance to desired results might be useful for achieving control in the next period but will not be helpful for achieving control in the current period.
7. In establishing controls, we should try to identify the early warning predictors of the variables we seek to control e.g. absenteeism and tardiness may indicate morale problems.
8. It may be possible and desirable to sample the variable that is being controlled. Sampling may be done by direct observation by walking around or statistically.
9. We should establish the acceptable range of variation for the value of each variable whose value we seek to control.
10. Reports should focus on exceptions to desired results and be made promptly to the person who is responsible.
11. The severity of the problem should be confirmed by independent means, The cause of the problem needs to be identified and corrective action taken. The results of the corrective action should be monitored and compared to expectations.

12. We should develop a discerning view of controls and apply judgement in establishing them and in interpreting results.

Notes

## Self Assessment

Fill in the blanks:

5. All .....controls should reflect the basic elements of cybernetic paradigm.
6. .....should focus upon the objectives and key results of an activity and should be limited in number.

### 10.4 The Control Process Hierarchy

The organization consists of many responsibility centres. The control process paradigm can be expanded to include superior-subordinate behaviour as well. To do so, it is desirable to view the relationship between a superior and subordinate as a means-end chain or relationship. The goals or ends of the superior are communicated to the subordinate, who, in turn, devises means that are appropriate to achieve those ends. These means in turn becomes ends for the subordinate, who, in turn, become the basis for more detailed means for the next level of supervision.

The process can be illustrated as follows:

The control process begins when a superior meets with a subordinate to review past performance and negotiate goals, new objectives and targets for key variables for the next year. Once goals are negotiated, the subordinate will track actual performance at periodical intervals.

The superior meets with the subordinates, periodically, during the period to review performance. They agree on that portion of the performance that is satisfactory (that is, where targets are being met) and on those areas where improvement is necessary. For those areas, where performance has not been satisfactory, they seek to discover the reasons and once, they identify the possible causes of shortfall in performance, they agree a plan of correction.

During the next review session, they review the progress on the past corrective action, together with current performance to arrive at targets and actions for next period. The process continues in a repetitive manner for each period throughout the organization. A reward system is established that provides rewards based upon performance and improvement in performance.

The targets of the superiors are negotiated before the superior negotiates with subordinates and may be altered based upon negotiations with subordinates. The subordinates, objectives should contribute towards the fulfillment of the goals and objectives of the superior. The objectives of the superior should be less than the sum total of the objectives of all subordinates.

All targets should be specific and if possible measurable. They should be limited.



*Example:* Not more than seven key target, per manager) in number, given the information-processing limits of managers. Finally, they should include variables that cannot be measured in financial terms and variables that are qualitative in nature.



*Example:* Workforce development and product quality). Often, quantitative surrogates may be developed for qualitative variables.

Other interactions almost certainly occur between the superior and the subordinate. Some of these are given in Figure 10.2.

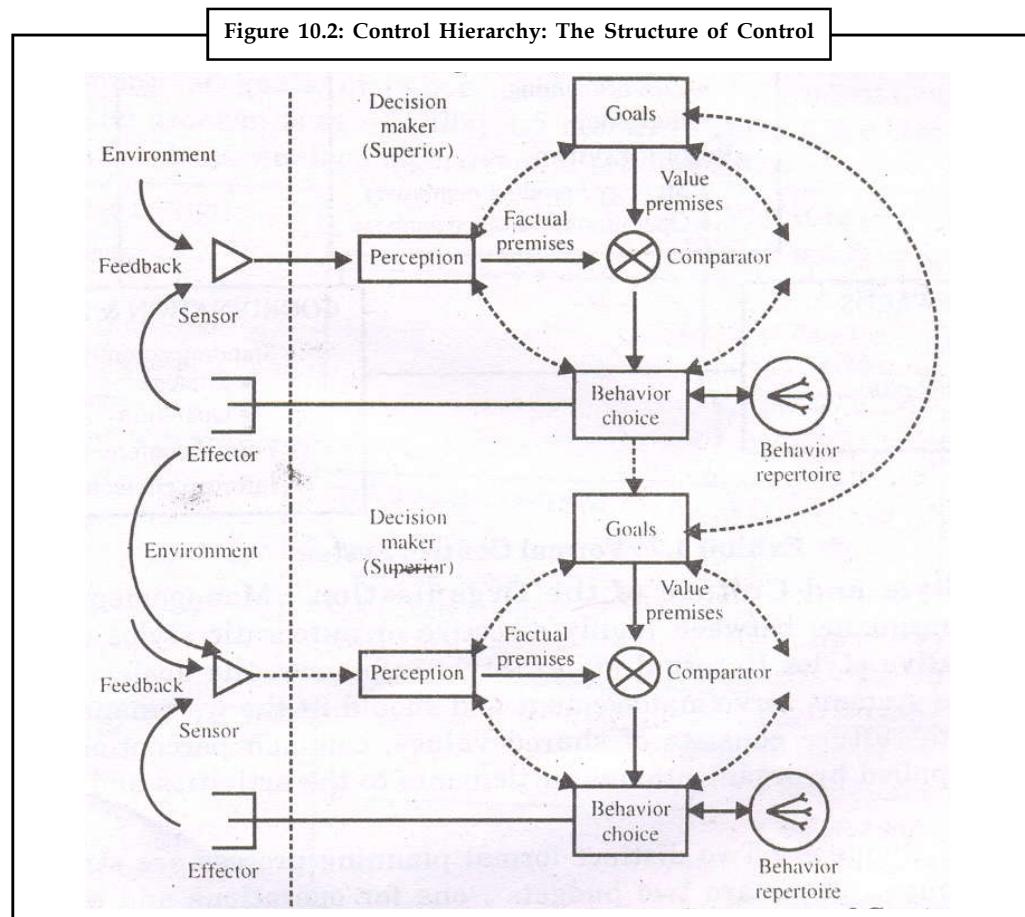
**Notes**



*Example:* The extent to which a subordinate has managerial autonomy in decisions depends upon how much influence on the subordinate's behaviour is exerted by the superior effector.

Moreover, the perceptions of a superior in assessing a given problem faced by a subordinate may influence the perceptions of subordinates.

To summarise, the goal-oriented control process follows the cybernetic paradigm and it includes the essential elements of planning (goals), decision-making (behavioural choice) and control (comparator-feedback). It operates within the control structure (a hierarchy of controls paradigm) and has its purpose of the continuous attainment of organizational goals and objectives. Responsibility centres are linked to one another by their control processes in a hierarchical structure of control according to reporting relationships.



#### 10.4.1 Adaptive Control Systems: Two Sets of Mutually Supportive Systems

A control system is a set of formal and informal systems that are designed to assist management in steering the organization towards the achievements of its purpose by forging unity out of the diverse efforts of sub-units and of individuals. These two sets of systems are distinctive but highly interrelated and, sometimes, indistinguishable, sub-division of control systems.

**Notes**

*Notes* They are considered adaptive if the two systems are internally consistent, consistent with one another and designed to permit learning that is effective in continuously meeting the competitive challenges in the environment.

### 10.4.2 Formal Control System

There are generic set of five mutually supportive management subsystems and is useful for describing the formal aspects of management control systems.

The details of the sub-systems are given below:

#### Management Style and Culture of the Organization

Management styles may be summarized on a continuum between highly directive or autocratic styles (external styles) and highly participative styles (internal styles). Style influences the design of management systems in that, these systems serve management and should fit the way management chooses to operate. The corporate culture consists of shared values, common perceptions and common decision premises applied by organization's participants to the activities and problems of the organization.

#### Formal Control Process

Two distinct formal planning processes are strategic planning and operations planning. There are two budgets: one for operations and one for strategy. There are two sets of reports: one for strategic reports and one for operating activities. Monthly, quarterly and yearly to date comparisons are made and detailed operating variances are calculated to assess progress towards achieving operating plans. Reporting against strategic plans accompany action programme of projects that are monitored over time.

#### Infrastructure

The infrastructure consists of organization structure and patterns of autonomy. The corporate structure needs to embody provisions for both the strategic and operational mode of operations. One for strategic business planning is to create Strategic Business Units (SBUs) at various levels of the organization. An SBU is defined for those parts of business that can relate to an established outside market, including competitors. Profit centres are then established at various levels below the SBU level. Each of the profit centres acts like a small business organization with profit responsibility.

#### Rewards



*Caution* Rewards must match incentives to the value contribution of individuals in the organization.

Incentives take the form of materialistic and non-materialistic inducements and include all forms of monetary compensation together with non-monetary forms. The reward system should emphasize both individual and group performances as well as operating and strategic performance. Formal reward programmes are necessary to reward performance on all four dimensions.

Notes	<b>Co-ordination and Integration Mechanisms</b>
	<p>Two management committees with overlapping membership strategy committee and operating management committee, one for strategy and the other for operations, are helpful for resource allocation, decision-making and conflict resolving. Formal meetings of the key managers of the organization including those at the profit centre level are held periodically to formalize the results of the planning process, to enhance communication, and each manager makes a commitment of what is proposed.</p>

### **10.4.3 Informal Control Process**

The informal control process consists of activities engaged in by members of the organization outside the formal control process while encountering non-routine decisions such as: realignment of goals or when seeking new information to increase their understanding of the problem area.

#### **Informal Organization Structure and Emergent Roles**

The informal dimensions of structures arising out of interactions among people are difficult to define; yet all organizations have them. These interactions include person-to-person contacts, networks, ad hoc teams and available expert resources.

#### **Informal Control Process**

Management decisions are based upon experience, intuition and feeling. Successful decision-making involves sensing the whole and impact of the decision on the whole.

#### **Informal Recognition and Rewards**

Informal rewards are stature-oriented. These rewards are bestowed upon the key team members within the informal system. They are, usually, more intrinsic in nature. Individuals are shown respect for their ability to operate within the informal control system and the team itself shares in the recognition. Informal teams and networks also tend to bestow respect upon their own members.

#### **Informal Co-ordinating Mechanism**

These evolve as people develop working relationships. They depend upon interpersonal relationships and as such are quite adaptable, growing and changing to meet the perceived needs of the organizational rewards. Communications tend to be less guarded during informal communications, leading to discussion of more sensitive issues. They are exceptionally helpful in supporting key values of the organization.

Current environment change, expanded competition and the need for associated technical innovation have all increased the uncertainties to which today's organizations must adapt. Management gains the necessary flexibility by 'backing away' from formal controls in order to explore alternative actions. In this way, management shortens communication channels.

The exhibit below presents the activities and actions taken within the formal control system. These actions may be observed directly as the organization performs its tasks. Informal actions include assuming responsibilities in addition to formal ones, searching for and gathering information, showing appreciation and members checking with others in another organizational unit.

Formal Actions based primarily upon the assumptions of formal authority:

Notes

The Formal System	Actions refer to
Infrastructure	Chartering or appointing Establishing managerial support Setting a direction or mission
Style and Culture	Training in values, beliefs or social dynamics
Planning and Control Process	Establishing procedures Clarifying procedures Documenting procedures Developing measurement matrices Reporting / providing feedback
Reward System	Giving a merit increase
Co-ordinating Mechanism	Establishing communications among organizational units

Informal Actions based primarily upon assumptions of perceived need by the Individual:

The Informal System	Actions refer to
Emergent Roles	Becoming the expert Assuming new responsibilities
Style and Culture	Training in values, beliefs or social dynamics
Active Planning & Control Process	Searching and gathering information Investigating and brainstorming, exploring possibilities and potential solutions Discussing developments regarding problems, projects and goals
Reward System	Showing appreciation Giving thanks Recognizing accomplishment
Co-ordinating mechanisms	Members checking with others in other units

Management will ensure that each subsystem and both subsystems are mutually supportable. One improperly designed system can block desirable activities in the other system.

## Self Assessment

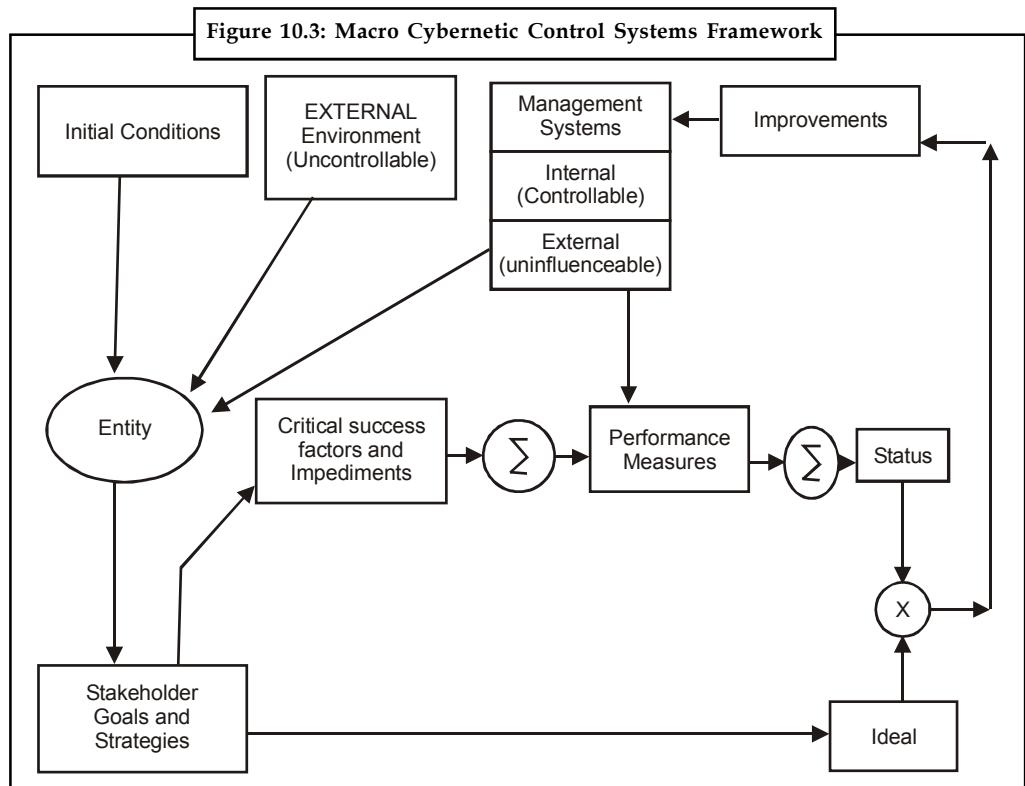
Fill in the blanks:

7. The control process begins when a superior meets with a subordinate to review ..... and negotiate goals, new objectives and targets for key variables for the next year.
8. A control system is a set of ..... that are designed to assist management in steering the organization towards the achievements of its purpose.

## 10.5 Macro Cybernetic Framework

The above two models lead to macro-cybernetic framework that incorporates all aspects of the design of control system, including the MSSM framework. The Figure 10.3 is such a macro framework that places the entire task of control system design within the cybernetic framework.

Notes



The framework can be understood by viewing it from left to right. The initial conditions or state of the organization are taken as given. Stakeholders, goals and strategies for attaining them are elicited. Critical Success factors and impediments are identified, leading to the identification of appropriate performance measures. The MSSM is designed to control the factors that can be controlled, to predict uncontrollable factors and to influence these external factors that cannot be controlled. Status reports are prepared periodically comparing actual performance against ideal performance.



*Notes* Gaps are a signal that the changes must be made and improvement sought.



Tasks

1. What does the MSSM stand for?
  - (a) Mutually supportive systems model
  - (b) Mutual strategic management system model
  - (c) Managing strategic and subsystem model
  - (d) None of these.
2. Who coined the term "cybernetics"?
 

(a) Richard Mason	(b) N. Weiner
(c) Robert Anthony	(d) Stafford Beer

**Self Assessment****Notes**

Fill in the blanks:

9. The .....is designed to control the factors that can be controlled, to predict uncontrollable factors and to influence these external factors that cannot be controlled.
10. .....is a signal that the changes must be made and improvement sought.

**10.6 Summary**

- Control of an undertaking consists of seeing that everything is being carried out in accordance with the plan which has been adopted, the orders which have been given, and the principles which have been laid down. Organisation should add Interactive Control System to manage the network between people, teams, customers and suppliers.
- “Cybernetics” is derived from the Greek work “Kybernetics” which means “Steersman”. The fundamental concern of cybernetics is with negative feedback and the role of negative feedback mechanism to explain purposive and adoptive behaviour.
- The process of establishing control should be established as a constructive exercise not a punitive one. Use of controls should be to assist people in attaining goals and objectives for which they are responsible.
- The control process paradigm can be expanded to include superior-subordinate behaviour as well. To do so, it is desirable to view the relationship between a superior and subordinate as a means-end chain or relationship.
- Two distinct formal planning processes are strategic planning and operations planning. There are two budgets: one for operations and one for strategy. There are two sets of reports: one for strategic reports and one for operating activities.

**10.7 Keywords**

**Control System:** A control system is a set of formal and informal systems that are designed to assist management in steering the organization towards the achievements of its purpose by forging unity out of the diverse efforts of sub-units and of individuals.

**Informal Control Process:** The informal control process consists of activities engaged in by members of the organization outside the formal control process while encountering non-routine decisions such as: realignment of goals or when seeking new information to increase their understanding of the problem area.

**Management Styles:** Management styles may be summarized on a continuum between highly directive or autocratic styles (external styles) and highly participative styles (internal styles).

**Steersman:** A Steersman is a person who directs or governs a ship and corrects deviations from planned course as they occur.

**10.8 Review Questions**

1. Briefly explain interactive control system in management control system.
2. What elements, according to Griesinger, constitute the Cybernetic paradigm vis-à-vis the Control Process?

- Notes**
3. How do you describe formal aspects of management control systems to include a generic set of five mutually supportive management subsystems?
  4. What role has informal control process in the development of management control system?

**Answers: Self Assessment**

- |                               |                                |
|-------------------------------|--------------------------------|
| 1. Training/Leadership Skills | 2. Interactive Control System  |
| 3. Cybernetics                | 4. Feedback                    |
| 5. Goal-oriented              | 6. Control                     |
| 7. Past performance           | 8. Formal and Informal systems |
| 9. MSSM                       | 10. Gaps                       |

**10.9 Further Readings**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Macariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanavel, P, "Management Control System", Himalaya Publishing House.



*Online links*

[http://www.12manage.com/methods\\_simons\\_levers.html](http://www.12manage.com/methods_simons_levers.html)

[books.google.com](http://books.google.com) › Science › Mechanics › Dynamics › General

<http://www.facstaff.bucknell.edu/mastascu/econtrolhtml/Intro1.html>

## Unit 11: Management Compensation

Notes

### CONTENTS

- Objectives
- Introduction
  - 11.1 Characteristics of Incentive Compensation Package
  - 11.2 Short-term Incentive Plans
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    - 11.3.2 CEO's Compensation
  - 11.4 Incentives for Business Unit Managers
  - 11.5 Performance Criteria
  - 11.6 Criteria for Evaluating Effectiveness of a Formal Management
    - 11.6.1 Output Criteria
    - 11.6.2 Input-related Criteria
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  - 11.9 Review Questions
  - 11.10 Further Readings

### Objectives

After studying this unit, you will be able to:

- Identify the characteristics of incentive compensation package
- Explain the short-term incentive plans
- Discuss the long-term incentive plans
- Describe the incentives for business unit managers
- Explain the executive summary
- Identify the criteria for evaluating effectiveness of a formal management control system

### Introduction

The incentive compensation system is a key management control device. Since it is an important mechanism that encourages and motivates managers to achieve organizational objectives. Incentives tend to support the following:

1. Individuals get strongly motivated by the potential of earning rewards than the fear of punishment.
2. A personal reward is relative or situational. Monetary compensation is an important means of satisfying certain needs but beyond a satisfying level, the amount of compensation is not necessarily as important as non-monetary rewards.

- Notes**
- 3. If senior management by its actions regards the management control system as important, operating managers will also regard it likewise. If it is otherwise, the operating managers will follow suit.
  - 4. Individuals are highly motivated when they receive reports or feedback about their performance. Without such feedback, people are unlikely to obtain a feeling of achievement or self realization or sense corrective actions that are needed to meet their objectives.
  - 5. An incentive becomes less effective as the period between an action and the feedback increases. At lower levels in the organization, the optimal frequency of feedback between the action and the feedback may be only hours; for senior management, it may be months.
  - 6. Motivation is the weakest when the person perceives an incentive as being either unattainable or too easily attainable. Motivation is strong when the objective can be obtained with some effort and when the individual regards its attainment as important in relation to personal needs.
  - 7. The incentives provided by the budget or other statements of objective are the strongest when managers participate actively alongwith their superiors in the process of arriving at the budgeted amounts.

## **11.1 Characteristics of Incentive Compensation Package**

A manager's total compensation package consists of three components:

- 1. Salary
- 2. Benefits and perquisites and
- 3. Incentive compensation

The three components are interdependent but the third is specially related to the management control function.



*Caution* Many corporate laws and securities regulations require that incentives compensation plans and revisions of existing plans be approved by the shareholders and before that it has to be approved by the board of directors.

Incentive compensation plans can be divided into:

- 1. Short-term incentive plans, which are based on performance in the current year and
- 2. Long-term incentive plans, which relate compensation to the longer-term accomplishments. The manager may earn a bonus under both plans. Short-term bonus is usually paid in cash whereas long-term bonus plan usually consists of an option to buy the company's equity shares at some price other than market value.

## **11.2 Short-term Incentive Plans**

First of all, the total amount of bonus that can be paid to a qualified group of employees in a given year which is called the "bonus pool", is decided based on overall profitability in the current year (in some companies, the current quarter) and also make the total compensation paid to executives competitive. Several methods of establishing bonus pool are as given below:

- 1. Bonus equal to a set percentage of profits. The drawback of this method is that one has to pay bonus even at low levels of profitability. It also does not consider additional

	Notes
	investments put in, which in turn gives additional profits although the performance of the company may remain static or even deteriorating.
2.	To base bonus on a percentage of earnings per share, over and above a predetermined level of earnings per share. This method does not consider increases in investment from reinvested earnings. This problem can be tackled by increasing the minimum earnings per share year by a percentage of the annual increase in retained earnings.
3.	To relate profits to capital employed i.e., shareholders' equity plus long-term liabilities. Bonus is equal to a percent of the profits before taxes and interest on long-term debt minus a capital charge on the total of shareholders' equity plus long-term debt. This is similar to Economic Value added concept or Residual Income method. The difficulty with this method is that a loss year reduces shareholders' equity and thereby increases the amount of bonus to be paid in subsequent profitable years.
4.	To define capital as equal to shareholders' equity. This has the same disadvantage as in the earlier method.
5.	Base bonus or increase in profitability over the previous year. This method rewards a mediocre year that follows a poor one but also fails to reward a good year if it happens to follow an excellent one. This problem can be partially corrected by basing the bonus on an improvement in the current year that is above moving average of profits in the number of past years.
6.	Base bonus on company profitability relative to industry profitability. Obtaining comparable industry data may be difficult because few companies have the same product mix or employee identical accounting systems. This method also could result in a high bonus in a mediocre year because one of the competitors had a poor year.



*Notes* In calculating both the profit and capital components of the above bases, adjustments may be made in the reported net income because of extraordinary gains and losses on account of discontinued operations.

Similarly, goodwill resulting from acquisition is to be excluded though included in the published financial statements.

Instead of paying the total amount in the bonus pool, the plan may provide annual carry over of a part of the amount and the extent of accumulated carryover to use in the current year if the bonus otherwise be too low in the current year. These are decided by the committee of the board of directors. His method of Carryover offers more flexibility since payment is not determined by a formula and the board of directors can exercise its judgement. Again, it reduces the magnitude of swings that occur when bonus payments is strictly based on the formula. The disadvantage of this method is that bonus is less related to current performance.

Though the amount of bonus is calculated annually, payments to recipients may be spread over a period of years 5 or 3. Under this system, executives receive only one-fifth or one -third of their bonus in the year in which it was earned. Balance portion is paid equally over the next four years or two years as the case may be.

This deferred payment method offers a number of advantages:

1. Managers can estimate, with reasonable accuracy, their cash income for the current year.
2. Deferred payments smoothen the managers' receipt of cash because the effects of cyclical swings in profits are averaged in the cash payments.

- Notes**
- 3. A manager who retires will continue to receive payments for a number of years which augment post-retirement income and also provides a tax advantage.
  - 4. The deferred time frame encourages longer-term thinking with regard to decision making.



*Did u know?* Deferred bonus plan has the disadvantage of not making the amount available to the executives in the year when earned. Another disadvantage is that manager may not receive the deferred bonus if he leaves the organization voluntarily (excluding disability, death or being laid off), thus, deterring him from leaving the organization.

### **11.3 Long-term Incentive Plans**

The basic premise of long-term incentive plans is the growth in the value of company shares; reflect company's long-run performance. There are several types of such plans. The popularity of specific plan changes with factors like changes in income-tax law, changes in accounting treatment and the state of the stock market. Some of these plans are given below:

- 1. **Stock Options:** A stock option is a right to buy a no. of shares at or after a given date in future (the exercise date) at a price agreed upon at the time the option is granted (usually the current market price of 95% of the current market price). The major motivational benefit of stock option plans is that managers can directly effort towards the long-term as well a short-term performance of the company. The manager gains if he sells the shares later at a price that exceeds the price paid. The managers can retain equity even if they leave the company and consider selling and making profits later on.



*Caution* Many stock options are for restricted period and can be sold only if the prescribed period is over.

- 2. **Phantom shares:** This method awards managers a number of shares for bookkeeping purposes. At the end of the specified period (say 5 years), the manager is entitled to receive an award equal to the appreciation in the market value of shares since the date of award. This award may be in cash, shares or both.
- 3. **Stock appreciation rights:** A stock appreciation right is a right to receive cash payments based on the increase in the value of shares from the time of the award until a specified future date.



*Did u know?* Both phantom shares and stock appreciation rights are a form of deferred cash bonus, in which the amount of bonus is a function of the market price of the company's shares.

- 4. **Performance shares:** A performance share plan awards a specified number of shares to a manager when specific long-term goals have been met i.e., percentage growth in earnings per share over a three to five year period and was not influenced by stock prices due to reasons other than increase in company's earnings.



*Notes* The only disadvantage of this method is that basing the bonus on accounting measures of performance, actions that corporate executives take to improve earnings per share, not contributing to the economic worth of the firm.

5. **Performance units:** In a performance unit plan, a cash bonus is paid on the attainment of specific long-term targets. This plan, thus, combines aspects of stock appreciation rights and performance shares. This plan is useful in companies with little or no publicly traded stock.

**Notes**

### **11.3.1 Incentive for Corporate Officers**

Each corporate officer, except the CEO, is responsible in part, for the company's overall performance. These corporate offices are entitled to and are motivated by a bonus for good performance. However, the part of the performance each one of them generated cannot be measured.



*Example:* Chief financial officer, human resources vice-president etc. To induce the desired motivation, the CEO recommends to the compensation committee of the board of directors, on the basis of each person's performance and is necessarily subjective. In some companies, it is aided by a management by objectives system (MBO) in which specific objectives is agreed upon at the beginning of the year and attainment of these objectives is assessed by the CEO.

### **11.3.2 CEO's Compensation**

The CEO's compensation usually is discussed by the compensation committee of the Board of Directors after CEO has presented recommendations for compensation for his subordinates. From this presentation, the CEO's general attitude towards the appropriate percentage of incentive compensation in a given year is fairly obvious. In ordinary circumstances, the committee may apply the same percentage of the CEO's compensation. However, the committee may signal a different appraisal of the CEO's performance by deciding on a higher or lower percentage and a frank explanation of the reasons for the choice.

### **Self Assessment**

Fill in the blanks:

1. ....is the weakest when the person perceives an incentive as being either unattainable or too easily attainable.
2. ....equal to a set percentage of profits.
3. ....plan has the disadvantage of not making the amount available to the executives in the year when earned.
4. A .....right is a right to receive cash payments based on the increase in the value of shares from the time of the award until a specified future date.

### **11.4 Incentives for Business Unit Managers**

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A wide range of options exist in developing an incentive compensation package for business-unit managers. These are provided below:

1. ***Types of incentives:***

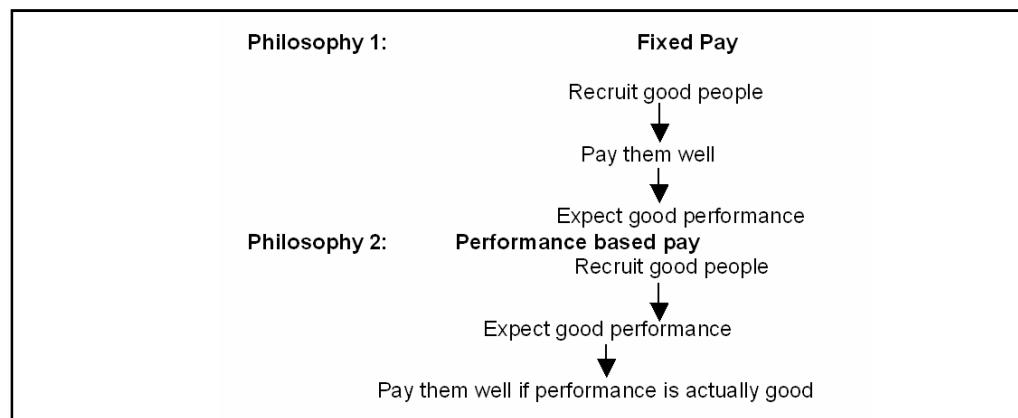
- (i) Financial rewards
  - (a) Salary increase

- Notes**
- (b) Bonuses
  - (c) Benefits
  - (d) Perquisites
- (ii) Psychological and Social Rewards:
- (a) Promotion possibilities
  - (b) Increased responsibilities
  - (c) Increased autonomy
  - (d) Better geographical location
  - (e) Recognition
2. ***Size of bonus relative to salary:***
- (i) Business unit profits
  - (ii) Lower cut-offs
3. ***Bonus based on:***
- (i) Business unit profits
  - (ii) Company Profits
  - (iii) Combination of the two
4. ***Performance criteria:***
- (i) Financial criteria
    - (a) Contribution margin
    - (b) Direct business unit profit
    - (c) Controllable business unit profit
    - (d) Income before taxes
    - (e) Net income after tax
    - (f) Return on investment
    - (g) Economic value added
  - (ii) Time period
    - (a) Annual financial performance
    - (b) Multi-year financial performance
  - (iii) Non-financial criteria
    - (a) Sales growth
    - (b) Market share
    - (c) Customer satisfaction
    - (d) Quality
    - (e) New product development

- |  | <b>Notes</b> |
|--|--------------|
| (f) Personnel development  | (f)          |
| (g) Public responsibility  | (g)          |
| (iv) Relative weights assigned to financial and non-financial criteria | (iv)         |
| (v) Benchmarks for comparison  | (v)          |
| (a) Profit budget  | (a)          |
| (b) Past performance   | (b)          |
| (c) Competitors performance.   | (c)          |
| <b>5. Bonus determination approach:</b>                                |              |
| (i) Formula based  | (i)          |
| (ii) Subjective  | (ii)         |
| (iii) Combination of the two   | (iii)        |
| <b>6. Form of bonus payment:</b>                                       |              |
| (i) Cash   | (i)          |
| (ii) Stock   | (ii)         |
| (iii) Stock options  | (iii)        |
| (iv) Phantom shares  | (iv)         |
| (v) Performance shares   | (v)          |

***Size of Bonus relative to Salary:*** There are two philosophies on incentive compensation:

Fixed pay and Performance based pay as given below:



***Caution*** Under fixed pay, compensation comes first and performance comes later, under performance-based pay, performance comes first and compensation comes later.

The two philosophies have different motivational implications for managers. Since salary is an assured income, an emphasis on salary may lead to conservatism and complacency. An emphasis on incentive bonus on the other hand tends to encourage managers to put forth maximum effort hence, many companies emphasize incentive bonuses for business unit managers.

Notes	<b>Cut-off Levels</b>
	A bonus plan may be limited at either end. (1) The level of performance at which a maximum bonus is reached (upper cut-off) and (2) lower cut-off, the level below which no bonus award will be available. When business unit managers recognize that either the maximum bonus has been attained or there will be no bonus at all, the motivational aspect of bonus system will be contrary to corporate goals. Instead of optimizing profits in the current period, managers may be motivated to decrease profitability in one year by overspending on discretionary expenses such as: advertising, research and development, so as to create an opportunity for a higher bonus in the next year. This situation can be corrected by carrying over the excess or deficiency into the following year i.e., bonus available for distribution in a given year would be the amount of bonus earned during that year plus any excess or minus any deficiency from the previous year.

### **Bonus Basis**

A business unit manager's incentive bonus could be based solely on total corporate profits or solely on business unit profits or on some mix of the two.

**Note:** In a single industry firm, where business units are highly interdependent, the manager's bonus is tied primarily to corporate performance, since inter-unit co-operation is critical.

In a conglomerate, on the other hand, the business units are usually autonomous. In such a context, it would be counterproductive to base business unit manager's bonuses primarily on company profits since this would weaken the link between performance and rewards. Therefore, it is desirable to reward such business unit managers primarily based on business unit performance and so foster the entrepreneurial spirit.

For related diversified firms, it might be desirable to base part of the business unit managers' bonus on business unit profits and part on company's profit, to provide the right mixture of incentives - namely: to optimize units' results while, at the same time, co-operating with other units to optimize company performance.

## **11.5 Performance Criteria**

To decide the criteria, as the basis for deciding bonus for business unit managers, the following need to be considered:

1. ***Financial criteria:*** If the business unit is a profit centre, the choice of financial criteria include contribution margin, direct business unit profit, controllable business unit profit, income before taxes and net income after taxes. If the unit is an investment centre, decisions need to be made in three areas:
  - (i) Definition of profit
  - (ii) Definition of investment, and
  - (iii) Choice between return on investment and EVA

If the responsibility centre is a revenue centre, the financial criteria would be sales volume or sales rupees.

2. ***Adjustments for uncontrollable factors:*** In addition to selecting the financial criteria, adjustments need to be made for uncontrollable factors such as: expenses as a result of decisions made by executives above the business unit level (to close a factory that was working at 30 % of capacity) and to eliminate the effects of losses due to acts of nature (fire, earthquakes, floods) and accidents not arising due to negligence of the manager.

3. **Benefits and shortcomings of short-term financial targets:** Linking business unit manager's bonus with annual financial targets after adjusting uncontrollable factors may induce managers to search for ways and means to improve the financial targets, which may lead to the following:

Notes

- (i) The short-term actions which are not in long-term interests of the company (e.g. under the maintenance of equipment) may be encouraged.
  - (ii) Managers may not for new investments which will benefit long-term at the expense of short-term financial results.
  - (iii) Managers may be motivated to manipulate its accounting records to show higher than actual profits.
4. **Mechanism to overcome short-term bias:** If financial criteria are supplemented with additional incentive mechanism shortcomings of short-term financial targets can be avoided. The following are the possibilities:
- (i) To base part of the manager's bonus on multi-year performance i.e., performance over a three to five-year period, which has the advantage of extending the time horizon of the managers. The approach has certain weaknesses. First, the efforts and rewards in a multi-year award scheme lessen the motivational effect. Second, a manager may retire or be transferred during the multi-year period resulting in lots of complexity. Third, there is mere likelihood that factors beyond the control of the manager will influence the achievements of long-range targets.
  - (ii) To develop a balanced scorecard including one or more non-financial criteria such as sales growth, market share, customer satisfaction, product quality, new product development, personnel development and public responsibility. Each of these factors will affect long-run profits.
  - (iii) To base part of the business unit managers' bonus on long-term incentive plans such as stock options, phantom shares and performance shares. These plans focus the business unit managers on company-wide performance and on long-term performances. Advantages and limitations of these plans have been discussed in earlier sections.
5. **Benchmarks for comparison:** The performance of a business unit manager can be appraised by comparing actual results with the profit target, with past performance or with competitor's performance. Normal practice is to evaluate the business unit manager against the profit budget and from the motivational point of view, the business unit manager should participate in the development of profit budget and the budget is challenging and attainable.

**Bonus determination approach:** A bonus award for a business unit manager can be determined on the basis of either a strict formula such as: percentage of business units operating profit or a purely subjective assessment by the manager's superior or by some combination of the two.

Exclusive reliance and objective formula i.e., output control, has some merits; reward system can be specified with precision with performance standards, and the superiors cannot exercise any bias or favouritism in assessing the performance of subordinate managers. The major limitation is that they cannot induce managers to look into other dimensions that are important but difficult to quantify such as: R&D and human resources management, other than performance criteria. Hence, some subjectivity in determining bonuses, therefore, is desirable in most units.

- |              |   |
|--------------|---|
| <b>Notes</b> | A subjective approach is desirable in the following circumstances: <ol style="list-style-type: none"><li>1. When manager's personal control over a unit's performance is low.</li><li>2. When the business unit manager inherits problem created by a predecessor.</li><li>3. When the business unit is highly interdependent with other units and therefore, its performance is influenced by the decisions and actions of outside individuals.</li><li>4. When the strategy requires much greater attention to longer-term concerns (as is the case in a business unit aggressively building market share).</li></ol> |
|--------------|---|

### **Self Assessment**

Fill in the blanks:

5. Under ..... compensation comes first and performance comes later, under performance-based pay, performance comes first and compensation comes later.
6. In a ....., where business units are highly interdependent, the manager's bonus is tied primarily to corporate performance, since inter-unit co-operation is critical.

## **11.6 Criteria for Evaluating Effectiveness of a Formal Management Control System**

Identification can be done in two ways for evaluating the effectiveness of a formal control system:

1. Based on output criteria and
2. Input-related criteria

### **11.6.1 Output Criteria**

Two very important output criteria have been identified:

1. The extent to which the formal systems are actually used by management to make decisions in the control process. If the systems are not used, they cannot be effective, no matter how sophisticated they are. On the other hand, we should never expect formal management control system to be relied upon exclusively for decision-making. Informal systems are also used in practice.
2. This criteria is difficult to apply, though it is equally important. It has to do with the quality of the decisions made in the control process and the influence of the systems on the quality. The most objective measure here is the extent to which the organisation has been achieving its objectives and goals over a reasonable period of time.

### **11.6.2 Input-related Criteria**

Four input-related criteria have been identified against which management systems should be evaluated:

1. The extent to which each part of the formal management system is linked with the other. There should be reasonably tight connection among the sub-processes of environment analysis, business planning, programming, budgeting, reporting and analysis. If not, the formal systems may not be having much influence upon the control process.

- |  |              |
|--|--------------|
| 2. The criterion has to do with the role of staff. There should be enough staff support to line management so as to facilitate or provide a catalyst for the control process.  | <b>Notes</b> |
| 3. The third criterion has to do with the extent to which the systems focus upon building commitment to organisational goals and objectives. To build commitment, organization should encourage participation in the planning and control process. Emphasis should be laid on gaining explicit commitments during the control process.   |              |
| 4. The fourth criterion is that the system should encourage strategic and operational thinking on the part of all managers in the organisation. It should not encourage premature and excessive quantitative manipulations, which crowd one's thinking about fundamental business variables. The philosophy of the formal control system should be to focus upon strategic and operational resources and by using good data. |              |

The formal planning process in complex organisations tends to focus the limited time of managers upon the issue and data that are important for strategic and operational decision-making. It is a process within which decisions are made that match the human, physical and technological resources of the firm with the potential demands of the environment within which the firm operates. The limited resources of the firm are allocated under time pressure, in the face of uncertainty about the environment and within policy and structural constraints placed upon organisational units. The cybernetic paradigm indicates the crucial importance of environmental scanning to achieve control. Control is possible only to the extent; the environmental disturbances are predicted in advance to allow adequate reaction time.

### **Self Assessment**

Fill in the blanks:

7. The ..... process in complex organisations tends to focus the limited time of managers upon the issue and data that are important for strategic and operational decision-making.
8. ..... includes base pay, benefits, recognition awards and incentives.



*Tasks*

1. The manager's total compensation consists of three components - which one is correct?
  - (a) Salary
  - (c) Benefit and Perquisite
  - (b) Incentive
  - (d) All the three above
2. Short-term incentive plans are based on:
  - (a) Performance in the current year
  - (b) Performance of the earlier year
  - (c) Performance of the last 3 years
  - (d) Performance during last 5 years

*Contd...*

**Notes**

3. A bonus award from business unit manager can be determined on the basis of:
  - (a) Percentage of business units' operating profit
  - (b) New products developed
  - (c) Share of markets
  - (d) All of the above
4. Employees usually receive their bonus over a period of years, usually five. What is this method of payment of bonus called?
  - (a) Deferred
  - (b) Carry over
  - (c) Bonus pool
  - (d) Delayed payments
5. What is the basic assumption that the manager makes while implementing "loose controls."
  - (a) The business unit managers are efficient
  - (b) The business unit managers are efficient but are to be monitored
  - (c) Implementing tight control is more difficult than implementing loose controls
6. In which of the following incentive plans are managers awarded a specified number of shares when they meet specific long-term goals?
  - (a) Phantom shares
  - (b) Stock options
  - (c) Performance shares
  - (d) None of the above
7. Shareholders collectively vote on a formula to arrive at the total amount of bonus that can be paid in a given year. What is the kind of incentive?
  - (a) Bonus tool
  - (b) Bonus pool
  - (c) Bonus sharing
  - (d) Profit sharing

## 11.7 Summary

- The incentive compensation system is a key management control device. Incentive compensation plans can be divided into: Short-term incentive plans, Long-term incentive plans.
  - The basic premise of long-term incentive plans is the growth in the value of company shares; reflect company's long-run performance.
  - A wide range of options exist in developing an incentive compensation package for business-unit managers.
  - Under fixed pay, compensation comes first and performance comes later, under performance-based pay, performance comes first and compensation comes later.
  - Identification can be done in two ways for evaluating the effectiveness of a formal control system: (a) Based on output criteria and (b) Input-related criteria.

## **11.8 Keywords**

**Notes**

**Bonus:** Bonus equal to a set percentage of profits.

**Long-term Incentive Plans:** The basic premise of long-term incentive plans is the growth in the value of company shares; reflect company's long-run performance.

**Performance Units:** In a performance unit plan, a cash bonus is paid on the attainment of specific long-term targets.

**Stock Appreciation Rights:** A stock appreciation right is a right to receive cash payments based on the increase in the value of shares from the time of the award until a specified future date.

## **11.9 Review Questions**

1. What role management compensation plays in a management control system?
2. What are the characteristics of incentive compensation plans?
3. What are the long-term incentive plans?
4. How is incentive for corporate officers determined, including the CEO?
5. Describe the wide range of options available to business unit managers in developing an incentive compensation package.
6. What should be the size of bonus relative to salary?
7. In deciding incentive, what performance criteria should be considered for the responsibility centre? How should bonus be determined?

## **Answers: Self Assessment**

- |                    |                         |
|--------------------|-------------------------|
| 1. Motivation      | 2. Bonus                |
| 3. Deferred bonus  | 4. Stock appreciation   |
| 5. Fixed pay       | 6. Single industry firm |
| 7. Formal planning | 8. Extrinsic            |

## **11.10 Further Readings**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Macariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House.

**Notes**



*Online links*

[http://www.indianmba.com/Articles\\_on\\_Management/AOM31/aom31.html](http://www.indianmba.com/Articles_on_Management/AOM31/aom31.html)

<http://payroll.naukrihub.com/compensation/>

<http://www.citehr.com/233449-compensation-management.html>

## Unit 12: Management Control for Differentiated Strategies

Notes

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- Objectives
- Introduction
- 12.1 Definition
- 12.2 Corporate Strategy and Control System
- 12.3 Business Unit Strategy and Control System
  - 12.3.1 Mission
  - 12.3.2 Competitive Advantage
- 12.4 Summary
- 12.5 Keywords
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### Objectives

After studying this unit, you will be able to:

- Discuss how to develop a strategic vision: The first direction-setting task
- Explain the establishing objectives: The second direction-setting task
- Explain strategies and two levels of strategies

### Introduction

Management control systems are tools to implement strategies. Strategies differ between organizations and controls should be tailored to the requirements of specific strategies. Different strategies require different task priorities, different key success factors and different skills, perspectives and behaviours.

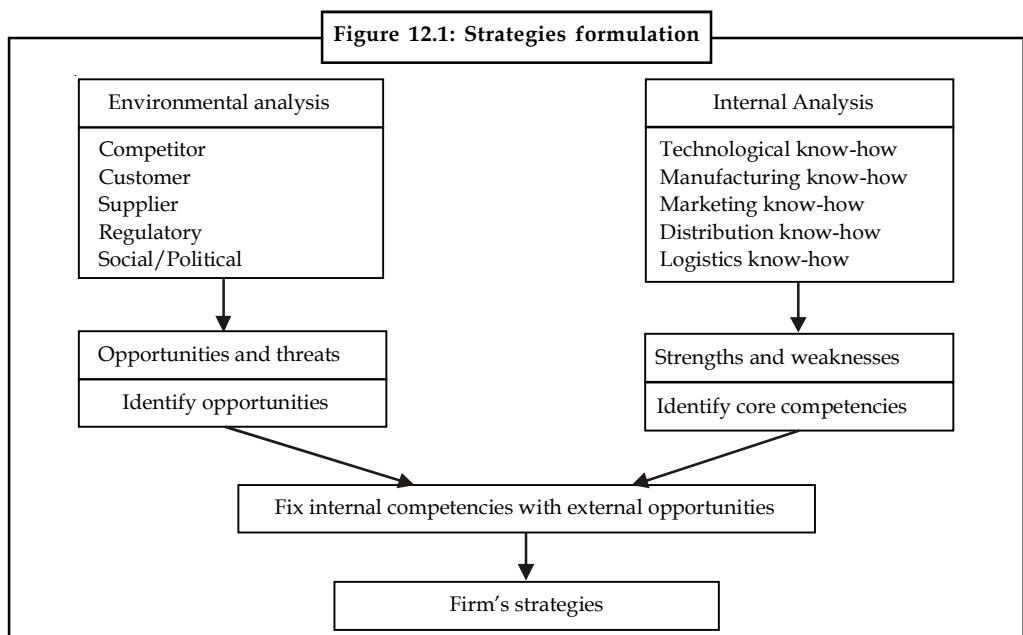
Strategies help an organization achieve its goals.

### **12.1 Definition**

Strategies describe the general direction in which an organization plans to move to attain its goals. Every well-managed organization has one or more strategies, although they may not be stated explicitly.

A firm develops its strategies by matching its core competencies with industry opportunities. Figure 12.1 lays down schematically, the development of a firm's strategies. First of all, an environment scanning is made in the light of the industry in which the company is operating to find out opportunities and threats. Next comes internal analysis of the company in the sphere of technological know-how, manufacturing know-how, marketing know-how, distribution and logistics know-how (major operating functions in the organization) to find out strength and

**Notes** weakness. Much attention has been given in recent years on developing more rigorous frameworks to conduct environmental analysis (to identify opportunities and threats) and internal analysis (to identify core competencies). Strategies are laid down to fit the company's core competencies with environmental opportunities.



Strategies are different at different hierarchical levels; there is a clear need for consistency in strategies across business units and corporate levels.

## **12.2 Corporate Strategy and Control System**

The logic for linking controls to strategy is based on the following lines of thinking:

1. Different organizations generally operate in different strategic contexts.
2. For effective execution, different strategies require different task priorities; different key success factors; and different skills, perspectives and behaviours.
3. Control systems are measurement systems that influence the behaviours of those people whose activities are being measured.
4. Thus, a continuing concern in the design of control system should be whether the behaviour induced by the system is the one that is consistent with the strategy.

At the single business end, the company tends to be functionally organized, with senior managers responsible for developing the company's overall strategy to compete in its chosen industry as well as its functional strategies in such areas as research and development, manufacturing, and marketing. In contrast, at the unrelated diversified end, the notion of "industry" loses its meaning. An unrelated diversified company (conglomerate) usually, is organized into relatively autonomous business units. Given the large and diverse set of businesses, the senior managers, in such firms, tend to focus on portfolio management (i.e., selection of businesses in which to engage and allocation of financial resources to the various business units), and they delegate the development of product/market strategy to the general managers of business units. Different corporate strategies imply different organization structures and, in turn, different controls.

## **12.3 Business Unit Strategy and Control System**

Notes

In this section, we consider intra-firm differences in control systems. Diversified corporations segment themselves into business units and typically assign different strategies to the individual business units. Many chief executive officers of multi-business organizations do not adopt a standardized, uniform approach to controlling their business units; rather, they tailor the approach to the strategy of each business unit.

Business unit strategy consists of two interrelated aspects: mission and competitive advantage.

### **12.3.1 Mission**

The mission for ongoing business units could be either build, hold, or harvest. These missions constitute a continuum, with “pure build” at one end and “pure harvest” at the other end. For effective implementation, there should be congruence between the mission chosen and the types of controls used. We develop the control-mission “fit” using the following lines of reasoning.

1. The mission of the business unit influences the uncertainties that general managers face and the short-term versus long-term trade-offs that they make.
2. Management control systems can be systematically varied to help motivate the manager to cope effectively with uncertainty and make appropriate short-term versus long-term trade-offs.
3. Thus, different missions often require systematically different management control systems.

#### **Mission and Uncertainty**

“Build” units tend to face greater environmental uncertainty than “harvest” units for several reasons:

1. Build strategies typically are undertaken in the growth stage of the product life cycle, whereas, harvest strategies typically are undertaken in the mature/decline stage of the product life cycle. Such factors as: manufacturing process, product technology, market demand, relations with suppliers, buyers, and distribution channels, number of competitors, and competitive structure change more rapidly and are more unpredictable in the growth than in the mature/decline stage of the product life cycle.
2. An objective of a build business unit is to increase market share. Since the total market share of all firms in an industry is 100 percent, the battle for market share is a zero-sum game; thus, a build strategy pits a business unit into greater conflict with its competitors than does a harvest strategy. Since competitors’ actions are likely to be unpredictable, this contributes to the uncertainty faced by build business units.
3. Both on the input side and on the output side, build managers tend to experience greater dependencies “with external individuals and organizations than do harvest managers. For instance, mission signifies additional capital investment (greater dependence on capital markets), expansion of capacity (greater dependence on the technological environment), increase in market share (greater dependence on customers and competitors), increase in production volume (greater dependence on raw material suppliers and labour market), and so on. The greater the external dependencies that the business unit faces, the greater the uncertainty it confronts.

- Notes**
4. Since build business units are often in new and evolving industries, the experience of build managers in their industries is likely to be less. This also contributes to the greater uncertainty faced by managers of build units in dealing with external constituencies.

### Mission and Time Span

The choice of build versus harvest strategies has implications for short-term versus long-term profit trade-offs. The share-building strategy includes (a) price cutting, (b) major R&D expenditures (to introduce new products), and (c) major market development expenditures. These actions are aimed at establishing market leadership, but they depress short-term profits. Thus, many decisions that the manager of a build unit makes today may not result in profits until some future period. A harvest strategy, on the other hand, demands attention to tasks with a view to maximize short-term profits.

We now discuss how the form and structure of control systems might differ across business units with different missions.

### Programming

While designing a programming process, several design issues need to be considered. There are no single answers on these design choices; rather, the answers tend to depend upon the mission being pursued by the business unit.

**Table 12.1: Different Strategic Implications for Programming Process**

	Build	Hold	Harvest
Importance of programming	Relatively high	→	Relatively low
Formalization of capital Expenditure decisions	Less formal DCF analysis; Longer payback	→	More formal DCF analysis, shorter payback
Capital expenditure Evaluation criteria	More emphasis on non-financial data (market share, efficient use of R&D dollars etc.)	→	More emphasis on financial data (cost efficiency, straight cash on cash incremental return)
Hurdle rates	Relatively low	→	Relatively high
Capital investment analysis	More subjective and qualitative	→	More quantitative and financial
Project approval limits at the business unit level	Relatively high	→	Relatively low

### Budgeting

Implications for designing budgeting systems to support varied missions are contained in the table shown below. The calculation aspects of variance analysis comparing actual results with the budget identify variances as either favourable or unfavourable. However, a favourable variance does not necessarily imply favourable performance; similarly, an unfavourable variance does not necessarily imply unfavourable performance. The link between a favourable or unfavourable variance, on the one hand, and favourable or unfavourable performance, on the other hand, depends upon the strategic context of the business unit under evaluation.

Notes

Table 12.2: Different Strategic Implications for Budgeting			
	Build	Hold	Harvest
Role of budget	More a short-term planning tool	→	More a control (document of restraint)
Business unit manager's influence in preparing the budget.	Relatively high	→	Relatively low
Revisions to the budget during the year	Relatively easy	→	Relatively difficult
Frequency of informal reporting and contacts with superiors	More frequent on policy issued; less frequent on operating issues	→	Less frequent on policy issues; more frequent on operating issues.
Frequency of feedback from superiors on actual performance versus the budget	Less often	→	More often
"Control Limit" used on periodic evaluation against the budget	Relatively high (i.e. more flexible)	→	Relatively low (i.e. less flexible)
Importance attached to meeting the budget	Relatively low	→	Relatively high
Output versus behaviour control	Behaviour control	→	Output control

1. In contrast to harvest units, budget revisions are likely to be more frequent for build units because of the more frequent changes in their product/market environment.
2. Build unit managers may have relatively greater input and influence in the formulation of the budget than harvest unit managers. This is so because "build" managers operate in rapidly changing environments and have better knowledge of these changes than does the senior management. For harvest units with stable environments, the knowledge of the manager is less important.

### Incentive Compensation System

In designing an incentive compensation package for business unit managers, the following are some of the questions that need to be resolved:

1. What should be the size of incentive bonus payments relative to the general manager's base salary? Should the incentive bonus payments have upper limits?
2. What measures of performance (e.g., profit, return on investment, sales volume, market share, product development) should be employed as the basis for deciding the general manager's incentive bonus awards? If multiple performance measures are employed, how should they be weighted?
3. How much reliance should be placed on subjective judgements in deciding on the bonus amount?
4. With what frequency (semi-annual, annual, biennial and so on) should incentive awards be made?

**Notes**

Decisions on these design variables are influenced by the mission of the business unit as shown in the following table.

Table 12.3: Different Strategic Implications for Budgeting			
	Build	Hold	Harvest
Percent compensation as bonus	Relatively high	→	Relatively low
Bonus criteria	More emphasis on non-financial criteria	→	More emphasis on financial criteria
Bonus determination approach	More subjective	→	More formula-based
Frequency of bonus payment	Less frequent	→	More frequent

As for the first question, many firms use the principle that the riskier the strategy, the greater the proportion of the general manager's compensation in bonus compared to salary (the "risk/return" principle). They maintain that, since managers in charge of more uncertain task situations should be willing to take greater risks, they should have a higher percentage of their remuneration in the form of an incentive bonus. Thus, reliance on bonus is likely to be higher for "build" managers than for "harvest" managers.

As for the second question, when an individual's rewards are tied to performance according to certain criteria, his or her behaviours are influenced by the desire to optimise performance with respect to those criteria. Some performance criteria (cost control, operating profits, cash flow from operations, and return on investment) focus more on the short-term performance, whereas, other performance criteria (market share, new product development, market development, and people development) focus on long-term profitability. Thus, linking incentive bonus to the former set of criteria tends to promote a short-term focus on the part of the general manager, whereas, linking incentive bonus to the latter set of performance criteria is likely to promote a long-term focus. Given the relative differences in time horizons of build and harvest managers, it may be inappropriate to use a single, uniform financial criterion (such as return on investment) to evaluate the performance of every business unit; rather, it may be desirable to use multiple performance criteria, with differential weights for each criterion depending on the mission of the business unit.

As for the third question, in addition to varying the importance of different criteria's, superiors must also decide on the approach to take in determining a specific bonus amount. At one extreme, a manager's bonus might be a strict formula-based plan, with the bonus tied to performance on quantifiable criteria (e.g., x percent bonus on actual profits in excess of budgeted profits); at the other extreme, a manager's incentive bonus amounts might be based solely on the superior's subjective judgement or discretion. Alternatively, incentive bonus amounts might also be based on a combination of formula based and subjective (non-formula) approaches. Performance on most long-term criteria (market development, new product development, and people development) is clearly less amenable to objective measurement than is performance along most short-run criteria (operating profits, cash flow from operations, and return on investment). Since, as already noted, build managers - in contrast with harvest managers - should focus more on the long run rather than the short run, build managers are typically evaluated more subjectively than harvest managers.

Finally, frequency of bonus awards influences the time horizon of managers. More frequent bonus awards encourage concentration on short-term performance since they have the effect of motivating managers to focus on those facets of the business that they can affect in the short run. Less frequent calculation and payment of bonus encourages the manager to take a long-term perspective. Thus, build managers tend to receive bonus awards less frequently than harvest managers.

**Notes**

### **Self Assessment**

Fill in the blanks:

1. ....segment themselves into business units and typically assign different strategies to the individual business units.
2. ....amounts might also be based on a combination of formula based and subjective (non-formula) approaches.

#### **12.3.2 Competitive Advantage**

A business unit can choose to compete either as a differentiated player or as a low-cost player. The choice of a differentiation approach, rather than a low-cost approach, increases uncertainty in a business unit's task environment for three reasons.

*First*, product innovation is likely to be more critical for differentiation business units than for low-cost business units. This is partly because a low-cost business unit, with its primary emphasis on cost reduction, typically prefers to keep its product offerings stable over time; whereas a differentiation business unit, with its primary focus on uniqueness and exclusivity, is likely to engage in greater product innovation. A business unit with greater emphasis on new product activities tends to face greater uncertainty, since the business unit is betting on unproven products.

*Second*, low-cost business units typically tend to have narrow product lines to minimize inventory carry costs as well as to benefit from scale economies. Differentiation business units, on the other hand, tend to have broader set of products to create uniqueness. Product breadth creates high environmental complexity, and consequently, higher uncertainty.

*Third*, low-cost business units typically produce no-frill commodity products, and these products succeed primarily because they have lower prices than competing products. However, products of differentiation business units succeed if customers perceive that the products have advantages over competing products. Since customer perception is difficult to learn about, and since customer loyalty is subject to change resulting from actions of competitors or other reasons, the demand for differentiated products is typically more difficult to predict than the demand for commodities.

### **Objectives of the Company**

The fixing of objectives is closely linked to the company's organisation structure. At the first level of responsibility, the overall objective is usually, earning the required return of the funds invested in the business, consistent with maintaining the sound financial position of the business. At the second level of responsibility, typical functional objectives that may be fixed are related to the following functions:

1. Marketing
2. Production
3. Research and Development

- Notes**
4. Personnel
  5. Finance

***Typical Marketing Objectives***

1. To improve market penetration with existing products.
2. To affect price changes to secure a more balanced price structure, including a review of discount policy.
3. To increase the effectiveness of sales staff in terms not only of sales level but also of sales costs and profitability of products sold.
4. To improve distribution methods including support facilities such as dealer services.

***Typical Production Objectives***

1. To ensure that the products produced are to the required quality standards.
2. To control raw materials, purchased parts and sub-assemblies, consumable stores and work-in-progress, at acceptable levels consistent with supply requirements.
3. To secure improvements in machine efficiency including set up times, work or tool change-over-periods and breakdown experience.
4. To facilitate the rearrangement, replacement or expansion of plant and machinery to secure the most effective use of the production resources.

***Typical Research and Development Objectives***

1. To provide research facilities adequate for the programmes of pure and applied research considered desirable for the business and to finance such activities in a systematic manner.
2. To carry out research to provide new products, methods and procedures for the company.
3. To convert the results of research into commercially viable products and procedures.

***Typical Personnel Objectives***

1. To engage in manpower planning to anticipate staff requirements at all levels and provide the organization to satisfy the needs identified.
2. To relate job by job analysis and description to identify the characteristics required by a good employee.
3. To reduce labour turnover to a reasonable level for the type of business undertaken.

***Typical Finance Objectives***

1. To provide the finance to carry out its planned operations.
2. To secure the best mix of sources of finance and allocation to the activities of the business to optimise the use of finance in the company.
3. To provide a return to shareholders indicative of the stability and strength of the enterprise related to funds to be retained in the business to finance the future growth of the business.

## **Implementing and Executing the Strategy: Phase 4 of the Strategy-making, Strategy-executing Process**

## Notes

In most situations, managing the strategy-execution process includes the following principal aspects:

1. Staffing the organization with the needed skills and expertise, consciously building and strengthening strategy-supportive competencies and competitive capabilities and organizing the work effort.
  2. Developing budgets that steer ample resources into those activities critical to strategic success.
  3. Ensuring the policies and operating procedures facilities rather than impede effective execution.
  4. Using the best-known practices to perform core business activities and pushing for continuous improvements. Organizational units have to, periodically, reassess how things are being done and diligently pursue useful changes and improvements in how the strategy is being executed.
  5. Installing information and operating systems that enable company personnel to carry out their strategic roles better day in and day out.

## **Inflating Corrective Adjustments: Phase 5 of the Strategy-making, Strategy-executing Process**

A company's vision, objectives, strategy, and approach to strategy execution are never final; managing strategy is an ongoing process, not an every now and then task.

## **Self Assessment**

Fill in the blanks:

3. ....business units typically produce no-frill commodity products, and these products succeed primarily because they have lower prices than competing products.
  4. At the first level of responsibility, the overall objective is usually, earning the ..... of the funds invested in the business, consistent with maintaining the sound financial position of the business.



## Tasks

1. Which of the following is organized to overcome the physical and biological limitations of an individual in dealing with their environment?  

(a) Subunits	(b) Goals
(c) Procedures	(d) None of the above
  2. Which one of the following is the qualitative key indicator for the banking industry?  

(a) Credits	(b) Per employee ratio for deposits
(c) Recovery of loan	(d) Profits and advances

*Contd...*

**Notes**

3. Which of the following is used to measure the quality of customer relations in a life insurance company?
  - (a) Repeat business
  - (b) Benefit cost analysis
  - (c) Complaints
  - (d) Interest rate
4. Which of the following is important to cost strategy?
  - (a) Quality of raw materials
  - (b) Price elasticity
  - (c) Unit cost performance relative to competitors
  - (d) Benefit cost analysis
5. Which of the following key success variables is derived both from industry characteristics and competitive strategy?
  - (a) Quality
  - (b) Inventory
  - (c) Profit
  - (d) Cost

## 12.4 Summary

- Management control systems are tools to implement strategies. Strategies differ between organizations and controls should be tailored to the requirements of specific strategies.
  - Strategies describe the general direction in which an organization plans to move to attain its goals. Every well-managed organization has one or more strategies, although they may not be stated explicitly.
  - At the single business end, the company tends to be functionally organized, with senior managers responsible for developing the company's overall strategy to compete in its chosen industry as well as its functional strategies in such areas as research and development, manufacturing, and marketing.
  - Business unit strategy consists of two interrelated aspects: mission and competitive advantage.
  - A business unit can choose to compete either as a differentiated player or as a low-cost player. The choice of a differentiation approach, rather than a low-cost approach, increases uncertainty in a business unit's task environment for three reasons.

## 12.5 Keywords

**Mission:** The mission of a business may be defined as the fundamental unique purpose that sets it apart from other firms of its type.

**Strategies:** Strategies describe the general direction in which an organization plans to move to attain its goals. Every well-managed organization has one or more strategies, although they may not be stated explicitly.

## **12.6 Review Questions**

**Notes**

1. Explain the concept of strategy.
2. "Strategies are developed by marketing its core competencies with industry opportunities". Discuss the statement.
3. What are the two interrelated aspects on which the strategy of a business unit is dependent? Can you describe them?
4. "Three interrelated questions have to be considered in developing business unit's competitive advantage". What are they? Discuss briefly.
5. How control and strategy are interrelated?

### **Answers: Self Assessment**

- |                             |                    |
|-----------------------------|--------------------|
| 1. Diversified corporations | 2. Incentive bonus |
| 3. Low-cost                 | 4. Required return |

## **12.7 Further Readings**



*Books* Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanel, P, "Management Control System", Himalaya Publishing House.



*Online links* <http://www.ecofine.com/strategy/Differentiation%20stategy.htm>  
<http://books.google.co.in/books>

Notes

## **Unit 13: Management Control of Service Organisation**

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### **Objectives**

After studying this unit, you will be able to:

- Discuss the service organisations
- Explain the professional service organisations
- Describe the financial Service organisation
- Identify the healthcare organisations

- Discuss the problems in creating and controlling intra-company investment centres such as branches of a bank
- Explain the non-profit organisations

Notes

## **Introduction**

The managers of nonprofit organizations are in charge of designing a proper system of management control to ensure effective and efficient use of resources. For several reasons, management control in service industries is somewhat different from management control in manufacturing companies. These factors apply also to the management control of legal, research and development, and other service departments in companies generally.

### **13.1 Service Organisations in General**

Characteristics that distinguish from manufacturing organizations:

1. ***Absence of inventory buffer:*** Goods in a manufacturing organisation held in inventory are a buffer that dampens the impact on production activity of fluctuations in sales volume. Services cannot be stored.



*Example:* Airplane seat, hotel room, hospital operating room or the hours of lawyers, physicians, scientists and other professionals.

The cost of many service organizations are essentially fixed in the short run. In the short run, a hotel cannot reduce its costs substantially by closing off some of its room. Similarly, professional organizations like accounting firms, law firms are reluctant to layoff professionals at times of low sales volume because of its effect on morale and costs of rehiring and training.

A key variable in most service organizations is the extent current capacity is matched with demand. This can be done in two ways. First, to stimulate demand in off peak period is by marketing efforts and price concessions. Second, service organisations adjust the size of the workforce to anticipated demand by such measures as, scheduling training activities in slack periods and compensating for long hours in busy period with time off later.

2. ***Difficulties in controlling quality:*** A manufacturing company can inspect the products before they are shipped to the customer. A service company cannot judge product quality until the moment the service is rendered and then the judgements are often subjective.
3. ***Labour intensive:*** Most service companies are labour intensive and cannot use equipment and automate production lines by replacing labour and reducing costs. Hospitals do add expensive equipment but mostly to provide better treatment and this increases cost.
4. ***Multi-unit organizations:*** Some service organizations operate many units in various locations with relatively small unit e.g. fast food restaurant chains, auto-rented companies, gasoline service stations, etc. Some of the units are owned, others operate under a franchise. The similarity of the separate units provides a common base for analyzing budgets and evaluating performance not available to the manufacturing company.
5. ***Historical development:*** Cost accounting started in manufacturing companies to value work in progress and finished goods inventories for financial statements. These systems provided raw data for use in setting selling prices and for other management purposes.

<b>Notes</b>	Many service organizations (with the exception of railroads and other regulated industries) did not have the need to develop cost data. Their use of product cost and other management accounting data is fairly recent.
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### **Self Assessment**

Fill in the blanks:

1. A key variable in most service organizations is the extent ..... is matched with demand.
2. A service company cannot judge ..... until the moment the service is rendered and then the judgements are often subjective.

## **13.2 Professional Service Organizations**

Research and development organizations, law firms, accounting firms, healthcare organizations, engineering firms, architectural firms, consulting firms, advertising agencies, etc. are examples of organizations whose products are professional services.

### **13.2.1 Special Characteristics**

1. **Goals:** A professional organisation has relatively few tangible assets; its principal asset is the skill of its professional staff which doesn't appear in its balance sheet. Return on assets employed, therefore, is not relevant in such organizations. Their financial goals are to provide adequate compensation to the professionals.

In many organizations, a related goal is to increase their size. It reflects economies of scale in using the efforts of a central personnel staff and units responsible for keeping the organizations up-to-date.

2. **Professionals:** Professional organizations are labour-intensive and the labour is of a special type. Many professionals prefer to work independently rather than as a part of a team.

Professionals tend to give inadequate weight to the financial implications of their decisions; they want to do the best job they can, regardless of their costs. This attitude affects the attitude of supporting staffs and non-professionals in the organisation; it leads to inadequate cost control.

3. **Output and input measurement:** The output of professional organizations cannot be measured in physical terms, such as: units, tons or gallons. We can measure the number of hours a lawyer spends on a case but this is a measure of input not output. Output is the effectiveness of the lawyers' work and this is not measured by the number of pages in a brief or the number of hours in the courtroom. Revenue earned is one measure of output in some professional organization, but these monetary amounts relate to the quantity of services rendered not to their quality (although poor quality is reflected in reduced revenues in the long-run). Furthermore, the work done by many professionals is non-repetitive. This makes difficult to plan the time required to accomplish the task, to set reasonable standards for task performance and to judge how satisfactory the performance was.

Some professionals, notably scientists, engineers and professors are reluctant to keep track of how they spend their time and this complicates the task of measuring performance. Nevertheless, difficult problems arise in deciding how time should be charged to clients, how to account for time spent, reading literature, going to meeting and otherwise keeping up-to-date?

4. **Small size:** Professional organizations are relatively small and operate at a single location. Senior management can personally observe what is going on and personally motivate employees. Hence, there is less need for a sophisticated management control system with profit centres and formal performance reports.
5. **Marketing:** A clear segregation between marketing activities and production activities (as observed in a manufacturing organisation), does not exist in most professional organizations. In some cases, professional ethical code limits the amount and character of overt marketing efforts by professionals. It is, therefore, difficult to assign appropriate credit to the person responsible for "selling" a new customer.

**Notes**

### 13.2.2 Management Control Systems

1. **Pricing:** If the profession is one in which members are accustomed to keeping track of their time, fees generally are related to professional time spent on the engagement. The hourly billing rate is based on the grade of the professional plus a loading for overhead costs and profit. In other professions such as, investment banking, the fee is based on the monetary size of the security issue. In still others, there is a fixed price for the project. Prices vary among professionals, they are relatively low for research scientists and relatively high for accountants and physicians.
2. **Profit centers and transfer pricing:** Support units such as maintenance, information processing, transportation, telecommunication, printing and procurement of material and services, charge consuming units for their services.



*Notes* The principles for transfer pricing are same as applicable to manufacturing companies.

3. **Strategy planning and budgeting:** The strategic plan of a professional organisation consists primarily of a long range staffing plan rather than a full blown plan for all aspects of the firm's operation.



*Notes* The budgeting process in professional organisation is similar to manufacturing organisation.

4. **Control of operations:** The billed time ratio, which is the ratio of hours billed to total professional hours available, is watched closely.

The inability to set standards for task performance, the desirability of carrying out work by teams, the consequent problems of managing a matrix organisation and the behavioural characteristics of professionals complicate the planning and control of the day-to-day operations in a professional organisation. When the work is done by project teams, control is focused on project. A written plan for each project is needed, and timely reports should be prepared that compare actual performance with planned performance in terms of cost, schedule and quality as done in management control of projects.

5. **Performance measurement and appraisal:** Appraisal of the large percentage of professionals who are within the extremes is much more difficult. For some professions, e.g. the recommendations of an investment analyst can be compared with actual market behaviour of the securities; the doctors' skills can be measured by the success ratio of operations.

**Notes** These measures are subject to appropriate qualifications and in most circumstances the assessment of performance is finally a matter of human judgement by superiors, peers, self subordinates and clients.

Judgements made by superiors are the most common. Professional organizations increasingly use formal systems to collect performance appraisals as a basis for personnel discussion and for discussion with the professional. Some systems require numerical ratings of specified attributes of performance and provide for weighted average of these ratings. Compensation may be tied in part to these numerical ratings. In a matrix organisation, both the project leader and the head of the functional unit, that is the professional organizational "home" judge performance.



*Did u know?* Appraisals by professional peers, or by subordinates, are sometimes part of a formal control system. In some organizations, individuals are asked to make a self-appraisal.

The budget can be used as a basis for measuring cost performance and the actual time taken can be compared with the planned time. Budgeting and control of discretionary expenses are as important in a professional firm as in a manufacturing company. Such financial measures are relatively unimportant in assessing a professional's contribution to the firms profitability. The professional major contribution is related to quantity and above all quality of work and its appraisal is largely subjective.



*Notes* In some professions, internal audit procedures are used to control quality.

### **Self Assessment**

Fill in the blanks:

3. .... organizations are labour-intensive and the labour is of a special type.
4. The ..... can be used as a basis for measuring cost performance and the actual time taken can be compared with the planned time.

## **13.3 Financial Service Organizations**

Financial service organizations include commercial bank and thrift institutions, insurance companies and securities firms. These companies are in business primarily to manage money.

### **13.3.1 General Observations**

1. The financial services sector constitutes an important backbone to world economies.
2. Some years earlier, commercial banking, investment banking, retail brokerage and insurance existed as distinct and separate industries; firms specialized in a single industry and tended to compete in a single country. Deregulation has removed industry and geographic boundaries.
3. Financial services firms have used the information technology revolution to invent new products and discover new methods of trading.
4. The need for controls in the financial services sector has become paramount to Indian financial crises during the second half of 1990s was in part, the result of inadequate controls in the banks in Thailand, Indonesia, Japan and other Asian countries.

- |  |              |
|--|--------------|
| 5. During the 1990s, new firms of financial instruments (such as derivatives) designed financial service firms sometimes resulted in massive losses for the clients. | <b>Notes</b> |
| 6. Finally, the corporate scandals during 2002 have created a huge push for investment banks to spin off their research departments.                                 |              |

### **13.3.2 Special Characteristics**

While the general principles and concepts of management control systems apply, they need to be adapted to the following special characteristics of financial services industry.

1. **Monetary assets:** Most of the assets of financial firms are monetary. The current value of monetary assets is much more easily measured than the value of plant and other physical assets or patents and other intangible assets. At any time, dollars held by all companies have the same value, valued at both its face amount and its purchasing power. Financial assets can be transferred from one owner to another easily and quickly.
2. **Time period of transaction:** The performance of those involved in bond issue, a mortgage loan or in selling and giving the insurance policy cannot be measured at the time the critical decision is made. Control requires that there be a means of continued surveillance of the soundness of the satisfaction during its life, including periodic audits of all outstanding loans.

Some transactions are completed quickly based on information obtained instantly or over a period.



**Notes** There is a need for a system to report securities held and to assess the risk to the organisation if prices move against the trader's securities.

3. **Risk and reward:** Most business decisions involve a trade-off between risk and reward. The greater the risk, the greater should be the anticipated reward. In financial services firms, this trade off is more explicit than in business investment such as, involved in purchase of a machine or the introduction of a new product.
4. **Technology:** Technology has revolutionized the financial service industry. Financial service firms have used information technology as a way to offer innovative services.

### **Self Assessment**

Fill in the blanks:

5. The greater the ..... the greater should be the anticipated reward.
6. ..... has removed industry and geographic boundaries.

### **13.4 Healthcare Organizations**

Healthcare organizations consist of hospitals, clinics and similar physicians, organizations, health maintenance organizations, retirement and nursing homes, home care organizations, and medical laboratories, among others.

Notes

### 13.4.1 Special Characteristics

1. **Different social problems:** The present healthcare delivery system is unworkable. On the other hand, the cost per treatment is increasing with the development of new equipment and new drug. On the other hand, the number of ill persons is increasing.
2. **Change in mix of providers:** Within the overall increase in healthcare cost, significant change has occurred in the way in which healthcare is delivered and, hence, in the viability of certain types of providers. Many services that traditionally were provided in hospitals on an inpatient basis are not provided in outpatient clinics or in patient's homes. Entrepreneurs have entered the industry to provide these new services.
3. **Third party payers:** About more than 3/4th of the health care is provided by government and insurance companies, and the balance by individual patients.

Because of increase in hospitals' costs per patient and entrepreneur entering the field, a need is felt to install sophisticated cost accounting systems, usually systems are purchased from an outside software organisation and then adapt to their needs. These systems provide information on individual patients (similar to job-cost-systems in automobile repair shops) and they report actual costs compared with standard costs for each Diagnostic Related Shops (on which insurance company other service providers reimburse costs); costs are classified by departments and by attending physicians within departments.

This information is in addition to information traditionally collected in hospitals, it focuses on outputs (patients care) as well as inputs (cost per laboratory test).

4. **Professionals:** The management control implications of professionals are same as those discussed earlier. Their primary loyalty is to the profession rather than to the organizations, department manager typically, is professional whose management function is only part time, the Chief of Surgery does surgery. Historically, physicians have tended to give little emphasis on cost control.
5. **Importance of Quality Control:** The healthcare industry deals with human lives, so the quality of the service it provides is of paramount importance.

### 13.4.2 Management Control Process

Subject to the characteristic described above, the management control process in the healthcare industry is similar to manufacturing organisation. Because of the shift in the product mix and because of increase in the quantity and cost of new equipment, the strategic planning process in hospitals is important. The annual budget preparation process is conventional. Huge quantities of information are available quickly for the control of operating activities.



*Did u know?* Financial performance is analysed by comparing actual revenues and expenses with budgets, identifying important variances and taking appropriate actions on them.

## 13.5 Problems in Creating and Controlling Intra-company Investment Centres such as Branches of a Bank

### 13.5.1 General Characteristics

Commercial banks earn income primarily by lending and investing money. The interest on this money is their revenue. They obtain the money primarily by attracting deposits. The interest

they pay on these deposits corresponds approximately to cost of sales in a manufacturing company. Thus, net interest expense, income, which is the difference between interest revenue and interest, is a key number for bank management to watch, it corresponds to gross margin in a manufacturing company. If the difference between interest revenue and interest expense plus revenue from other activities, more than covers its operating costs and loan losses, the bank is profitable.

Notes



*Did u know?* Commercial banks are regulated by the Central Bank Authority.

### 13.5.2 Management Control Implications

**Interest Rates:** The relationship between interest revenue and interest expense is a key variable. Banks regularly calculate the amount of interest sensitive assets, interest sensitive liabilities and the 'gap' which is the difference between them, is the bank's interest rate exposure; both prudent management and rules of regulatory bodies require that it be kept within certain bounds.

Banks refer to the elements of risk as 'four Cs', the borrower's general character, its capability to repay the loan from earnings or other sources, its capital on net assets, and the collateral pledged for the specific loan. For accepting greater risks, the bank expects a greater reward. Senior management has the task of setting the rates on loans of various risks and maturities, of setting corresponding ratio for deposits and of assuring that the actions of the individual managers add up to a satisfactory interest rate exposure for the bank as a whole.



*Caution* The management control system must ensure that its rates are communicated throughout the organisation and that they are adhered to.

**Volume:** Most expenses are fixed in the short-term. Therefore, if a bank can increase its volume of deposits, other things being equal, it will be able to make more loans and the increased gross margin (i.e. net interest income) will increase its profits.

**Loan losses:** The central bank including the government has imposed strict limits for "non-performing loans" (i.e. loans whose payments are delinquent). These prevent the banks from making additional loans.

**Expenses:** Most of the expenses in a bank are personal related and are subject to budgeting and controls that are similar to the controls in a manufacturing company.

**Other income:** Banks earn income by handling trust accounts, collecting receivables and performing various other services for customers. Such services should be rendered at cost plus a profit margin.

**Joint revenues:** A depositor whose account is maintained in one branch may do business at another branch. Branch managers want to receive credit for the revenues that they generate by such activities and to be compensated for services that they furnish to customers of other branches. If the bank is organized into profit centres, the allocation of joint revenues can have a significant impact on profits.

**Profit Centres:** Many commercial banks set up profit centres, for their branches or for their individual headquarters activities, or both. In that case, transfer price for money should be solved. This price is an expense (similar to cost of sales) to activities that make loans and investments and it is revenue to activities that generate deposits. Some branches are 'loan heavy' (i.e. their loans exceed their deposits) and others are 'deposit heavy', profitability will

<b>Notes</b>	not be measured correctly unless the transfer price is fair to each type. If the transfer price for the cost of money is set too low, the profitability of the loan-heavy branches will be overstated, whereas if it is too high, the profitability of deposit heavy branches will be overstated.  Measurement of cost of money is also important in assessing the profitability of loans with different maturities, loan with different risk characteristics and loans to different markets.
	<p><b>Expense centres:</b> Since transfer price is so controversial that some banks decided not to develop transfer prices, there they control branches as expense centres. In such a situation, they measure performance by such indicators as: unit or rupees output per staff member, rupees of revenue and market share by product type, expenses for rupees of revenue and market share by product type, expenses for rupees of revenue compared with budget and quality indicators. Some use a Management By Objectives (MBO) system, in which principal objective is obtaining a specified numbers of additional customers. They make special analysis of profitability as a basis for setting prices and for making decisions about opening and closing branches and adding or discontinuing services.</p>

In comparing performance of several branches, the measurement of volume is a problem. The totals of each type of transactions can be done but aggregating these individual totals into an overall measure of volume can be misleading, unless differences in the effort required for the various types are taken into account.

### **Self Assessment**

Fill in the blanks:

7. The relationship between ..... and interest expense is a key variable.
8. If the ..... for the cost of money is set too low, the profitability of the loan-heavy branches will be overstated.

## **13.6 Non-profit Organizations**

The term “non-profit” tends to have negative connotations because it tells us what these organizations do not do, not what they do.

A non-profit organization is one that is chartered to operate in the interests of the society. It operates free of any obligation to pay income taxes. It is restricted by definition from participation in equity markets since it has no shareholders. Its sources of funds are derived from contributions, grants, operating surplus and debts instruments of various types. The principal goal of non-profits is defined by their mission.



**Caution** Non-profit institutions may be classified into two groups: Government organizations and private tax-exempt organizations. Private organizations can be further divided into commercial organisation and charitable groups, the former includes trade unions, trade associations and clubs and the latter includes hospitals, religious groups, research, educational and social service organizations.

### **13.6.1 Management Control Systems in Non-profit Organizations**

The issues involved in drafting management control system in a non-profit organisation can be discussed in the following heads:

	Notes
1.	The mission of non-profits
2.	Stakeholders' goals
3.	Key success factors
4.	Performance measures
5.	Infrastructure
6.	Management style and culture
7.	Formal Control Process
8.	Communication systems
9.	Rewards
10.	Informal control process.
1.	<p><b><i>The mission of Non-profits:</i></b> Non-profits are organised so as to pursue and accomplish a mission i.e., its purpose. Drucker emphasizes that a mission statement should contain the following three elements:</p> <ul style="list-style-type: none"><li>(i) The opportunities that the organization can exploit or needs that it can meet,</li><li>(ii) The strengths of the organisation</li><li>(iii) What members of the organisation believe in?</li></ul>
2.	<p><b><i>Stakeholder's goal:</i></b> In a non-profit organisation, there often is no dominant stakeholder but a multiplicity of key stakeholders e.g. a school board, a church or a childcare agency has multiple key stakeholders.</p> <p>Boards or Trustees are often major stakeholders because they are the key donors and contributors of time and effort. The board represents a real opportunity for these institutions so long as they focus on achieving the mission of the institution and stay out of operational details. The purpose of the board is to guide and direct the mission of the institution by evaluating major strategies, to select the CEO; they provide and secure funds, to provide outside professional perspective on governance and to make CEO accountable for the accomplishment of the mission.</p> <p>In addition to the board, each non-profit has mission stakeholders to serve: to save the lost, to heal the sick, to protect abused children, to educate children and so on. In addition, there are often external parties who do not participate directly in the affairs of the institution that have a vital interest in the institution, such as, the public in the work of a school district.</p> <p>Many employees and volunteers in a non-profit organisation participate because they believe in the mission of the organisation. But they believe in different aspects of the organisation.</p>



*Example:* Physicians look upon hospitals as a place to provide service for patients and they want beds and other services to be available for the patients, regardless of the cost.

They are not concerned about hospital finances and they resist contractual arrangements that interfere with their practices and as a result there is often a conflict between hospital administrators and the physicians employed at the hospital.

In formulating stakeholder's goals, it is necessary to integrate all of the stakeholder's goals around the missions of the organization.

- Notes**
3. **Key success factors:** A key success factor for many non-profit institutions is the number of volunteers that it is able to attract and the number of volunteers; it is able to train at various levels of quality.

Another crucial variable is fund development, since most rely heavily on the support of the people, especially the volunteers, for contributions to support its paid staff and its programme.

Another critical variable is the ability to attract the quantity and quality of board member it needs.

4. **Performance measures:** Performance measures should be established for each critical success factor for each goal. Reports on these performance measures should be prepared and distributed to those responsible for their management.

We should attempt to quantify as many measurements as possible. Some are quite easy to quantify.



*Example:* The number of patients attended to by the physician during a specified period of time.

Others (example: the quality of care) are not so easy to measure but are nevertheless critical. But even these critical variables that are not easily quantified may have quantitative surrogates.

5. **Infrastructure:** Non-profits tend to have flatter organizational structures. Organisations tend to be functional and the functions are headed by professionals (e.g. doctors, social workers, ministers, professions). Typical responsibility centres in a child care agency are social work, operations, administration and education. They tend to be cost centres unless revenue is generated, in which case they are either revenue centres or contribution centres.

The modern hospital has a dual organisation structure, one for the medical side of the institution and the other for administrative services. The medical side is dominated by physicians and a broad range of technical and support staff. Administrative services include housekeeping, food service, maintenance, billing and accounting. A good deal of autonomy is usually granted to the hospital departments headed by professionals such as: nursing, laboratory, pathology, radiology, surgery and so on. Most of these departments are cost centres where quality of care and overall cost performance is the key performance measures. Many hospitals have created SBUs for identifiable segments of the hospital such as outpatient surgery, obstetrics, pharmacy, emergency room, physical medicine, etc. which are profit centers and are established for strategic planning and implementation purposes.

6. **Management style and culture:** The small and mid-sized ones tend to take on the personality traits of the executive director and if he is a professional, there is a tendency to place primary attention upon his area of interest or training with little regard for management.

In case of hospital, dual structure results in an adversarial but co-dependent style.



*Caution* To manage the institution effectively, control must be maintained on the medical side of the organisation.

A general theme that seems to be pervasive in all departments of hospitals is that they are delivering health care of the highest quality possible.

7. **Formal control process:** The formal control tool is the budget. The budgeting process is complicated in the absence of clear, quantifiable performance objectives for evaluating programmes. As part of programme evaluation, it is necessary to determine programme costs. Programme costs are usually subdivided into two categories: direct and indirect. In most non-profits, overhead is allocated on the basis of direct labour costs.

**Notes**

In case of hospital, control within the medical side is necessary for quality patient care. This is done by using the patient record chart, which is divided into many segments containing progress notes, reports, and requests for all diagnostic and therapeutic procedures performed within each department, there are many levels of control related to the patient care mission to ensure the highest quality care.

A hospital is divided into mission centres i.e., the departments that work with patients directly.



*Example:* Inpatient care, laboratory radiology. Service centres such as, housekeeping, laundry and medical records provide support to each of the mission centres.

In addition, there are other support cost such as supplies, depreciation and insurance that serve both service and mission centers. Programme costing then involves choosing the final cost objective such as cost of care per day or cost associated with a particular diagnostic category. To do this, all direct costs associated with the final costs objective are traced to that cost objective. To allocate in direct cost, the standard practise is to take cost of support pools and allocate them to both service and mission centres based on allocation criteria that had the closest bearing on how the costs were incurred. The service centre costs are allocated to mission centres using allocation base that most nearly reflect the demand for service activities in mission centers. Cost variances are compared to budget can be worked out and analyzed.

8. **Communication systems:** Board members if organized properly can provide a very valuable contribution to the communication systems of the non-profit institution. If their strategic work is organized by committee and each committee meets regularly with the relevant operating committee to add vision and perspective, the board can play a very strong function in furthering the mission of the organisation.



*Notes* In case of hospital, there is plethora of communication mechanisms within both the medical and administrative sides. On the medical side, there is usually a computerized hospital information system that provides up-to-date patient information at nursing stations and contributes to the patient control process. The medical committees are comprised of physicians trying to work out the best course of treatment for a particular patient. These committees begin to alter the physician behaviour to achieve better cost performance while providing the highest quality of care.

9. **Rewards:** The paid staff as well as volunteer staff is committed to the mission of the organisation, hence financial rewards are not very important. Promotion opportunities are also not frequent.

In case of hospital, the primary rewards are derived from the satisfaction received from the fulfillment of the mission to provide high-quality health care. Physicians are well paid but other professionals are paid slightly less than their counterparts in the profit sector. Promotion in hospitals is few, given the flat organisation structure. There is little crossover from the medical side to the administrative side.

- |              |   |
|--------------|---|
| <b>Notes</b> | <p>10. <b><i>Informal Control Process</i></b></p> <p><i>Interpersonal relationship:</i> Because of fewer hard measurements, informal communications, networking and politics tend to be important processes for making resource allocation decisions.</p> <p><i>Informal control process:</i> Medical managements of patients tend to be very adaptable to the progression and resolution of diseases. Management flexibility, on the other hand, has historically been much less demonstrable.</p> <p><i>Informal rewards:</i> The strong culture of concern and pride in patient care is rewarded with a sense of accomplishment, providing strong information rewards. Many positions provide a fair degree of status within a hospital. Certainly, the physicians and administrators are in positions of high status.</p> <p><i>Informal communications:</i> Informal communications tend to be very prevalent and natural among peers but more restricted laterally between departments.</p> <p>Government organizations are service organisations and except for business like activities, they are non-profit organizations. Thus, characteristics described above, apply to these organizations. Their business-like activities such as electricity and water utilities operate like their private sector counterparts.</p> |
|--------------|---|
- 13.6.2 Special Characteristics**
1. ***Political influences:*** In government organizations, decisions result from multiple and often conflicting pressures. Elected officials, to be re-elected, advocate the perceived needs of their consistency even though they may not be in the best interests of society as a whole. These conflicting pressures results in less than optimum decisions. The managers may be prevented from making sound business decisions; they may be required to favour certain suppliers or to hire political supporters. Strict procurement policies and civil service regulations have lessened these pressures to some extent.
  2. ***Public information:*** In a democratic society, the press and public believe that they have a right to know everything about a government organization, because of freedom of information statutes. Some media stories describe exaggerated mismanagement. Therefore, to reduce opportunities for media gossip stories, government managers take steps to limit the amount of sensitive, controversial information that flows through the formal management control system. This lessens the effectiveness of the system.
  3. ***Attitude towards clients:*** For profit, companies and many non-profit organizations obtain their revenues from clients; hence these organizations welcome actual and potential clients and treat them well. Most government organizations are public supported; they obtain their revenues from the general public. To them, additional clients are a burden, because they create an additional demand on the service capacity resulting in poor services and the surly attitude of the bureaucrats. Managers recognize this and do their best to persuade employees to provide satisfactory services.
  4. ***Red tape:*** The government has promulgated huge and increasing number of rules and regulations. Some of these are necessary; others are reactions to minor misdeeds that become highly publicized.
  5. ***Management compensation:*** Managers and other professionals in government organizations tend to be less compensated than their counterparts in business. Consequently, the best managers do not go into public service. There are exceptions to certain types of scientists and engineers. Hence, there is a problem of rewarding good performance.

6. **Financial accounting:** Accounting standards for state and local government are established by the government accounting standards.

**Notes**



*Task* Visit any local hospital and find out how management control system works there.

### **13.6.3 Management Control Systems**

1. **Strategic Planning and Budget Preparation:** Strategic planning is important in government organizations, managers.



*Caution* Legislations must make difficult decisions about the allocation of resources.

Some of these decisions reflect political pressures, others are the result of sophisticated analysis especially benefit/cost techniques, which have become increasingly formalized. The annual budget process is also an important control device in government as it is in other non-profit organizations.

2. **Performance Measurement:** Expenses can be measured accurately in government organizations as in business. Revenue is not a measure of output in government organizations. Government has developed non-monetary indicators, which can be classified as (i) results measures, (ii) process measures and (iii) social indicators.

A results measure, also known as outcomes measure, is a measure of output related to the organizations' objectives.



*Example:* Number of students graduating, number of kilometers of roads completed. These measures do not give exact measure of output; the number of graduates says nothing about how well the students were educated.

A process measure is related to an activity carried on by the organization.



*Example:* The number of livestock inspected in a week, number of purchase orders issued in a day or number of lines entered in the computer in an hour.

These measures are easier to interpret since there is a close causal relationship between inputs (i.e., costs) and the process measure. Efficiency can be ascertained not the effectiveness i.e., how far it has achieved organization objectives.

A social indicator is a broad measure of output that reflects the result of the work of the organization. Since social indicators are affected by external forces they are at best or rough indication of accomplishments of the organization itself.



*Example:* Life expectancy is an indication of the effectiveness of the country's health care system but it is also affected by standard of living, dietary and smoking habits and other causes. Social indicators are useful in long-range analyses of strategic problems.

**Notes**

**Self Assessment**

Fill in the blanks:

9. A ..... is one that is chartered to operate in the interests of the society.
10. Most government organizations are public supported; they obtain their revenues from the .....



*Case Study*

**MediTech Hospital**

**M**editech Hospital is a 250 bed tertiary care hospital specializing in the treatment of many forms of cancer. Founded in 1950 as a centre for the treatment of tuberculosis patients, it has evolved into a major research and treatment institution. Many experimental therapies have been pioneered at Meditech Hospital. Patients with advanced diseases who did not find treatment anywhere else were treated here. From its inception until 1970, Meditech hospital was a charitable institution, providing care to patients free of charge. In 1970, as the hospital authorities felt that the funds they received were insufficient, they began to bill patients.

In order to bring professional management practices to the hospital operations, the staff decided to develop sound cost accounting and control procedures. Traditionally, hospitals have done little or no cost accounting. In the past, cost reimbursement was based upon "actual costs incurred" for patients. The government's policy to set different reimbursement levels for different diagnosis categories based on the severity of the diagnosis had resulted in tremendous pressure on hospitals., including Meditech Hospital, to determine their "true" cost for each relevant diagnosis category, so that costs could be reduced below the reimbursement level in order to provide subsidies for those services in which costs could not be reduced.

Meditech hired a cost accounting manager to install a new cost accounting system that could be used for budgeting and cost control at the hospital. The cost accounting manager identified the top revenue-producing procedures. He interviewed each departmental head and related technicians to determine the actual costs of each procedure performed in the department. Also the amount of time each employee spent on given task was identified with the help of questionnaire. The process was repeated for the medical group.

The cost data developed as per this procedure were then used to develop the annual operating budget. Each departmental head was expected to forecast a volume of procedures for the next year. Besides the actual volume of procedures, case mix (kinds of patients) was also forecasted by each department head. Here departments estimated the kinds of patients they are expected to treat over the next year. A standard treatment plan was prepared in order to identify what it took to treat an average patient with a given disease. On this basis, an approximate treatment cost to the hospital for a particular diagnosis and therapy was developed. In this way the hospital could gain insight into which procedures were more cost-effective as well as the costs of treating specific diseases.

Departmental managers did not like the cost accounting manager and tried to avoid him as they felt that the cost accounting manager was confronting them with problems which were outside their areas of competence. Further, they felt that budgeting was not directly related to the mission of the organization, which was to provide the highest-quality

*Contd...*

health care to patients. Since the process of developing operating budgets in relation to patient volume was a new concept for many medical managers, a considerable amount of time had to be spent to explain the process.

A monthly cost report was used to determine productivity levels for all non-physician personnel. Physicians refused to use monthly cost reports to control their behaviour.

**Questions**

1. How can sound control procedures help improve practices in a non-profit organization?
2. Discuss the features of the new cost accounting system implemented by Meditech hospital.

**Notes**

## **13.7 Summary**

- Because of their recent development, management control systems currently found in service organizations tend to be less advanced than those in manufacturing organizations.
- Because of the difficulty of measuring both the quantity and quality of output, judgments about both the efficiency and the effectiveness of the performance are more subjective than is the case when output consists of physical goods, which means that there is more room for legitimate differences of opinion about performance.
- Professional organizations are labour-intensive and the labour is of a special type. Many professionals prefer to work independently rather than as a part of a team.
- Financial service organizations include commercial bank and thrift institutions, insurance companies and securities firms.
- A non-profit organization is one that is chartered to operate in the interests of the society. It operates free of any obligation to pay income taxes. It is restricted by definition from participation in equity markets since it has no shareholders.

## **13.8 Keywords**

**Budget:** The budget can be used as a basis for measuring cost performance and the actual time taken can be compared with the planned time.

**Professional Organizations:** Professional organizations are labour-intensive and the labour is of a special type. Many professionals prefer to work independently rather than as a part of a team.

**Strategic Plan:** The strategic plan of a professional organisation consists primarily of a long range staffing plan rather than a full blown plan for all aspects of the firm's operation.

## **13.9 Review Questions**

1. Can you describe Management Control Systems in service sector vis-à-vis manufacturing sector?
2. What are the distinctive characteristics of non-profit institutions as compared to profit seeking institutions, while designing control systems?
3. What are the issues involved in drafting management control system in a non-profit organization?

- Notes**
4. What are the special characteristics of government organizations, in the light of management control system?
  5. How are strategic planning, budget preparation and performance measurement different in government organizations?

**Answers: Self Assessment**

- |                            |                    |
|----------------------------|--------------------|
| 1. Current capacity        | 2. Product quality |
| 3. Professional            | 4. Budget          |
| 5. Risk                    | 6. Deregulation    |
| 7. Interest revenue        | 8. Transfer price  |
| 9. Non-profit organization | 10. General public |

**13.10 Further Readings**



*Books*

Anthony, Robert N and Govindrajan, Vijay, "Management Control System", Tata McGraw Hill.

Kaura, Mohinder N, "Management Control and Reporting System", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "Management Control System: Text and Cases", Pearson Education Asia.

Saravanavel, P, "Management Control System", Himalaya Publishing House.



*Online links*

<http://www.inderscience.com/browse/callpaper.php?callID=1063>

<http://www.scribd.com/doc/42144383/Management-Control-Systems-in-Services-Organization>

## Unit 14: Management Control of MNC's

Notes

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- 14.7 Summary
- 14.8 Keywords
- 14.9 Review Questions
- 14.10 Further Readings

Notes	<b><u>Objectives</u></b>
	<p>After studying this unit, you will be able to:</p> <ul style="list-style-type: none"><li>● Recognize the international taxation</li><li>● Explain the transfer pricing – payments to and from foreign affiliates</li><li>● Discuss the control strategies</li><li>● Interpret the matrix organization structure and the multinational firm</li><li>● Explain the exchange risk management</li></ul>

## **Introduction**

Financial management practices for the MNC will include:

1. Why MNCs make capital expenditure in productive capacity in foreign lands, rather than first producing domestically and then exploring overseas markets.
2. International Capital Structure and cost of capital of an MNC.
3. How to adjust the present value framework for the parent firm to analyse a capital expenditure in foreign operations.
4. Issues in Cash Maintenance.
5. International tax environment and double taxation avoidance agreement.

## **14.1 International Taxation**

The international tax environment is useful to multinational firms in their tax plannings and also informative to investors in international financial assets.

### **14.1.1 Income Tax**

Many countries in the world collect a significant portion of their tax revenue from imposing an income tax on personal and corporate income. An income tax is a direct tax i.e., one that is paid directly by the tax payer on whom it is levied. The tax is levied on active income that is the income that results from production by the firm or individual or from services that have been provided. National tax rates vary from a low of zero per cent in such tax haven countries as: Bahrain, Bermuda, The British Virgin Islands and Cayman Islands as well as over 40 per cent in many countries.

### **14.1.2 Withholding Tax**

A withholding tax is a tax levied on passive income earned by an individual or corporate of one country within the tax jurisdiction of another country. Passive income includes dividends and interest income, and income from royalties, patents or copyright paid to the tax payer. A withholding tax is an indirect tax, that is, a tax that is borne by a tax payer who did not directly generate the income that serves as the source of the passive income. The tax is withheld from payments the corporation makes to the tax payer and paid over the local tax authority. By this method, the local tax authority assures that it has received tax due on passive income earned within its tax jurisdiction.

Many countries have tax treaties with one another specifying the withholding tax rate applied to various types of passive income. For example, a tax treaty between the US and Germany may specify that a US firm need not pay tax in Germany on any earnings from its German subsidiary that are remitted to the US in the form of dividends. A deferral principle specifies that parent companies are not taxed on foreign source income until they actually receive a dividend.

Notes

#### **14.1.3 Value Added Tax**

A Value Added Tax (VAT) is an indirect national tax levied on the value added in the production of a good (or service) as it moves through the various stages of production. In many European countries (especially the EU) and also Latin American countries, VAT has become a major source of taxation on private citizens. Many economists prefer VAT in place of personal income tax. A VAT encourages national saving, whereas income tax is a disincentive to save because the returns from savings are taxed. Moreover, national tax authorities find that VAT is easier to collect than an income tax because tax evasion is more difficult. Under a VAT, each stage in the production process has an incentive to obtain documentation from the previous stage that the VAT was paid in order to obtain the tax credit. Of course, some argue that cost of record-keeping under VAT imposes a hardship for the small business.



*Example:* Value added calculations.

Consider a VAT of 15% charged on a consumption good that passes through three stages of production. Suppose that stage I is the sale of raw materials to the manufacturer at a cost of Euro 100 per unit of production, stage II results in finished goods shipped to retailers at a price of Euro 300, stage III is the final retail sale to the final consumer at a price of Euro 380.

1. Euro 100 of value has been added in stage I resulting in VAT of Euro 15.
2. In stage II, the VAT is 15% of Euro 300 or Euro 45 with a credit of Euro 15.
3. In stage III, an additional VAT of Euro 12 is due on Euro 80 of value added by the retailer.

Since the final consumer pays a price of Euro 380, he effectively pays the total VAT of Euro 57 (Euro 15 + Euro 30 + Euro 12) which is 15 per cent of Euro 380. VAT is the equivalent of imposing a national sales tax.

#### **14.1.4 Worldwide Taxation**

The international tax environment confronting the MNC or an international investor is the tax jurisdiction of the respective countries where the MNC does business or in which the investor owns financial assets.

These are two fundamental types of tax jurisdiction. The worldwide and the respective territory: In case of the national residents of a country, national tax jurisdiction is to tax on their worldwide income no matter in which country it is earned. An MNC firm with many foreign affiliates would be taxed in its home country on its income earned at home and abroad. If the host countries of the foreign affiliates of an MNC also tax the income earned within their territorial boundaries, there will be the possibility of double taxation, unless there is a mechanism to prevent it.

#### **14.1.5 Territorial Taxation**

The territorial or source method of defining a tax jurisdiction is to tax all income earned within the country, by any tax payer, domestic or foreign (regardless of the nationality of the tax

**Notes** payer). Consequently, local firms and affiliates of foreign MNCs are taxed on the income earned in the source country. Obviously if the parent company of the foreign alternate also levies tax on the worldwide income, the possibility of double taxation exists unless a mechanism is there to prevent it.



*Notes* Under the Indian Income Tax Act, 1961, the incidence of tax on the tax payer depends on his residential status and also on the place and time of accrual or receipt of income. Indian Income (i.e., income earned or received in time) always taxable in India irrespective of the residential status of the tax payer. Foreign income (i.e., income which is not received or accrued in India) is taxable in the hands of resident (in case of firm, an association of persons, a joint stock company and every other person) or resident and ordinarily resident (in case of an individual and Hindu individual family) in India. Foreign income is not taxable in the hands of non-residents in India (Sec 5 and 9 of the Income Tax Act, 1961).

#### **14.1.6 Foreign Tax Credits**

The typical approach to avoid double taxation is for a nation not to tax foreign source income of its national residents. An alternative method is to grant the parent firm, foreign tax credit against the home taxes for taxes paid to foreign tax authorities on its foreign source income. In a given year, an overall limitation applies to foreign tax credits that are; maximum total tax credit should be limited to the amount of tax that would be due on foreign source income if it had been earned in the Home country.

#### **Self Assessment**

Fill in the blanks:

1. An ..... is a direct tax i.e., one that is paid directly by the tax payer on whom it is levied.
2. A ..... is an indirect national tax levied on the value added in the production of a good (or service) as it moves through the various stages of production.

### **14.2 Alternative Organisation Structures to Plan Tax Liabilities**

Different forms of structuring a multinational organisation within a host country can result in variation in tax liabilities for the multinational organisation. These are being discussed below.

#### **14.2.1 Branch and Subsidiary Income**

An overseas alternate of an MNC can be organised as a branch or a subsidiary. A foreign branch is not an independently incorporated entity separate from the parent; basically, it is an extension of the parent. Consequently, active or passive foreign source income earned by the branch will be consolidated with the domestic source income of the parent for determining the parent's tax liability, regardless of whether the foreign income has been repatriated to the parent in the foreign country or not.

A foreign subsidiary is an affiliate organisation of the MNC that is independently incorporated in the foreign country with the parent owning at least 10% of the voting equity stock. A foreign subsidiary in which the parent owns more than 10% but less than 50% of the voting equity is a minority foreign subsidiary or an uncontrolled foreign subsidiary. Active and passive foreign

source income derived from a minority foreign subsidiary is normally taxed to the parent company only when remitted to the parental through the dividend route. A foreign subsidiary in which the parent owns more than 50% of voting equity is a controlled corporation. Active foreign source income from a controlled foreign subsidiary is taxed only as remitted to the parent but passive income whether to be taxed or not depends upon the tax laws of the parent home country.

**Notes**



*Caution* The management of an MNC must be aware of any differences in the taxation of income by a particular host country when deciding whether to organise a foreign operation as a branch or subsidiary.



*Example:* New foreign affiliates experience operating losses in the early years of operation. In such a situation, it may be beneficial for the MNC to organise overseas operations initially, as a foreign branch of the parent because branch's operating losses are consolidated with the parent company's earnings for tax purposes.

In a situation where foreign source income is to be re-invested abroad to expand foreign operations, it may be preferable to organise it as a minority foreign subsidiary if the foreign income tax is less than the home country of the parent because the tax liability of the parent can be deferred until the subsidiary remits dividend to the parent.



*Task* Japanese MNCs such as Toyota, Toshiba and Matsushita made extensive investment in South East Asian countries like Thailand, Malaysia, Indonesia and India. In your opinion, what forces are driving Japanese investments in these regions?

### **14.3 Transfer Pricing - Payments to and from Foreign Affiliates**

MNCs in order to minimise their global tax liability, can have suitable transfer pricing strategies. Transfer price is an accounting value assigned to a good or service transferred from one affiliate to another. With higher transfer price, the larger will be the gross profit of the transferring division relative to the receiving division. Consequently, it is beneficial to follow a high mark-up policy on transferred goods and services from the parent to a foreign affiliate when the income tax rate in the host country is greater than the tax rate in the parent company because of lower taxable income in the high-tax cost country. On the other hand, when the parent company has a higher tax rate, a low mark up policy will enable higher taxable income in the host country and corresponding higher dividend remittance, which again will bear the high tax rate. However, if foreign source retained earnings were needed for re-investment in the host country, a low mark-up policy would result in tax savings (assuming that undistributed profits are not subject to high tax in the host country).

Government authorities are quite aware of transfer pricing schemes used by MNCs to reduce their worldwide tax liability and most countries have regulations, controlling transfer prices. These regulations state that the transfer price must reflect an arm's-length price i.e., a price, the selling affiliate would charge to an unrelated customer for similar goods or services. However, an arm's-length price is difficult to establish and evaluate, thus, there exists opportunity for some argument by an MNC to use transfer pricing strategies to reduce its worldwide tax liability.

**Notes**

### **14.3.1 Tax Haven**

A tax haven country is one that has a low corporate income tax and low withholding tax rates on passive income. Some major tax haven countries are the Bahamas, Bahrain, Bermuda, British Virgin Islands, Cayman Islands, Channel Island and the Isles of Manama.

Tax havens were once useful as locations for an MNC to establish a wholly owned "Paper" foreign subsidiary that in turn would own the operating foreign subsidiaries of the MNC. In this arrangement, dividends could be routed through the tax haven affiliate, but the taxes due on them can be deferred until a dividend was declared by the tax haven subsidiary. Nowadays, the benefit of a tax haven subsidiary has been reduced because of two reasons:

1. Present corporate income tax rate of the parent company is not high in comparison to most non-tax haven countries, thus eliminating the need for deferral.
2. Rules governing controlled foreign corporations have effectively eliminated the ability to defer passive income in a tax haven foreign subsidiary.

### **14.3.2 Fronting Loans**

A fronting loan is a loan between a parent and its subsidiary channelled through a financial intermediary, usually a large international bank. In a direct intra-firm loan, the parent company lends cash directly to the foreign subsidiary and the subsidiary repays it later. In a fronting loan, the parent company deposits funds in an international bank, and the bank then lends the same amount to the foreign subsidiary. Thus, a US firm might deposit \$ 100,000 in a London bank. The London bank then lends that \$100,000 to an Indian subsidiary of the firm. From the bank's point of view, the loan is risk-free because it has 100% collateral in the form of the parent's deposit. The bank 'fronts' for the parent, hence the name. The bank makes a profit by paying the parent company a slightly lower rate on its deposit than it charges the foreign subsidiary on the borrowed funds.

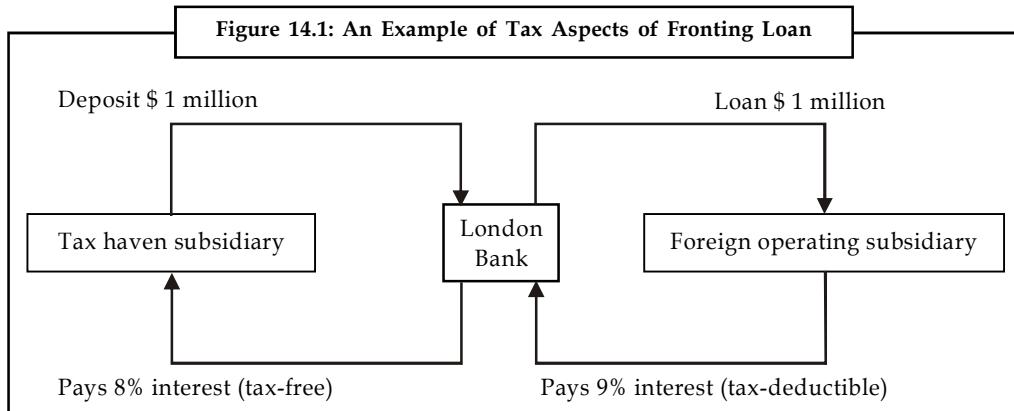
Firms use fronting loans for two reasons. First, the fronting loan can circumvent the host company's restrictions on the remittance of funds from a foreign subsidiary to the parent company. A host government might restrict a foreign subsidiary from repaying a loan to its parent in order to preserve the company's foreign exchange reserves, but is less likely to restrict a subsidiary's ability to repay loan to a large international bank, since stop payment to an international bank would hurt the company's credit image whereas, withdrawing payment to the parent company would probably have minimal impact on its image. Consequently, international business sometimes use fronting loans when they want to lend funds to a subsidiary based in a country with a fairly high political turmoil that might lead to restrictions on capital flows (i.e., when the level of political risk is high.)

A fronting loan can be structured to provide tax advantages. For example, a tax haven (Bermuda) subsidiary i.e., 100% owned by the parent company deposits \$ million in a London based international bank at 8% interest. The bank in turn lends \$ 1 million to a foreign operating subsidiary at 9% interest, (corporate tax rate is 50%). Under this arrangement, interest payment net of income tax will be as follows:

1. The foreign operating subsidiary pays \$90,000 interest to the London Bank which is equivalent to other tax costs of \$45,000.
2. The London bank receives the \$90,000. It retains \$10,000 for its services and pays \$80,000 interest on deposit to the Bermuda subsidiary.
3. The Bermuda subsidiary receives \$80,000 interest on deposit tax free.

**Notes**

The net result is that \$80,000 in cash has been removed from the foreign operating subsidiary to the tax haven subsidiary. Because the foreign operating subsidiary's after tax cost of borrowing is only \$45,000, the parent company has moved an additional \$35,000 out of the country by using this arrangement. If the tax haven subsidiary had made direct loan to a foreign operating subsidiary, the host government may have disallowed the interest charge on tax deductible expenses by ruling that it was dividend to the parent company disguised as an interest payment.



### 14.3.3 Tax Treaties: The Elimination of Double Taxation

The primary purpose of tax treaties is to prevent international double taxation or to provide remedies when it occurs. The general pattern between two treaty countries is to grant reciprocal reductions on dividends withholding and to exempt royalties and sometimes interest payments from any withdrawing tax.

The US has withholding tax of 30% for owners (individuals and corporates) of US securities that are issued in countries with which it has no tax treaty. However, interest on portfolio obligation and in bank deposits is normally exempted from withholding. When a tax treaty is in effect, the US rate on dividends generally is reduced to 15% and the tax on interest and royalties is either eliminated or is reduced to a very low level.

### Self Assessment

Fill in the blanks:

3. A ..... is an affiliate organisation of the MNC that is independently incorporated in the foreign country with the parent owning at least 10% of the voting equity stock.
4. A ..... country is one that has a low corporate income tax and low withholding tax rates on passive income.

### 14.4 Control Strategies

Control is necessary to achieve international objectives. It is much more than just the ownership of some voting share to direct company policy. Control is management planning, implementation, evaluation and correction of performance to ensure that the organisation meets its objectives. The top management's toughest challenge is to balance the company's global needs with its need to adapt to country level differences.

Control keeps a company's decisions or strategies on track. Control is also needed so that individuals may make decisions that may endanger the entire company.

<b>Notes</b>	Several factors make control more difficult internationally than it is domestically:
	<ol style="list-style-type: none"><li>1. <b>Distance:</b> In spite of growth in e-mail and fax transmissions, many communications are still being handled through face-to-face or voice-to-voice contact. The Geographical distance (especially, when operations span multiple time zones) and cultural disparity separating countries increase the time, expense and possibility of error in cross-national communication.</li><li>2. <b>Diversity:</b> When market size, types of competition, nature of the product, labour cost, the currency and a host of other factors differentiate operations among countries, the task of setting standards and evaluating performance to improve between functions is extremely complicated.</li><li>3. <b>Uncontrollable:</b> Effective corrective actions may be minimal because many foreign operations must contend both with the dictates of outside shareholders in the foreign company whose objectives may differ from those of the parent and with government regulations over which the company has no short-term influence. Further, most companies handle their international operations through foreign subsidiaries which are separate legal entities.</li><li>4. <b>Degree of Certainty:</b> Control implies setting goals and developing plans to meet those goals. Economics and industry data are much less complete and accurate from some countries than for others. Further, political and economic conditions are subject to rapid change in some countries.</li></ol> <p>Although the above factors make control more difficult in the international context, managers try to ensure that foreign operations comply with overall corporate goals and philosophies. The following are the five aspects of the international control process.</p> <ul style="list-style-type: none"><li>(i) Planning</li><li>(ii) Organisation Structure</li><li>(iii) Location of decision-making</li><li>(iv) Control mechanism</li><li>(v) Special situations including the dynamics of control</li></ul>

#### **14.4.1 Planning**



*Caution* Planning is an essential element of management control and the company must adapt its resources and objectives to different and changing international markets.

The first step (i) is to develop a long range strategic intent, an objective or mission that will hold the organisation together over a long period, while it builds global competitive viability.



*Example:* Honda and Canon developed strategic intent to become major global competitors.

The strategic intent provides whether and where the company wants to be a leader -



*Example:* Dominating its domestic market, dominating a regional or global market or attaining profit goals without being the market leader.

The next planning step (ii) is to analyse internal resources alongwith environmental factors in the home country. These resources and factors affect and constrain each country differently and sometimes each product differently for the same company. Basically, the most successful companies, internationally are those that find the right fit between what they need and what they are good at.

**Notes**

 *Example:* A small firm inexperienced in foreign operations may lack financial and human resources, even though it may have unique product capabilities. Unlike a large counterpart, it may have to collaborate with another company perhaps by licensing foreign production rather than owning facilities abroad.

Only by making an internal analysis (step ii) can a company set the overall objectives for its international activities (step iii).



*Caution* Managers must examine these activities in conjunction with the means of competing, such as by keeping prices low or differentiating through brand recognition.

Because each country in which the company is operating or proposing to operate is unique, managers must do a local analysis (step iv) before examining the final alternative (step v).

The selection among the alternatives is Step v which determines the extent to which a company follows a global, trans-national or multi-domestic strategy. These alternatives include:

1. ***The location of value added function:*** The choice of where to locate each of the functions that comprise the entire value added chain, from research to production to after sales servicing.
2. ***The location of sales targets:*** The allocation of sales among countries and the level of activities in each one, particularly in terms of market share.
3. ***The level of involvement:*** The choice of operating through wholly owned facilities, through partially owned facilities or through contract arrangements and whether the choice varies among countries.
4. ***The product/services strategy:*** The extent to which a worldwide business offers the same or different products in different countries.
5. ***Marketing:*** The extent to which a company uses the same brand name, advertising and other marketing elements in different countries.
6. ***Competitive Moves:*** The extent to which a company makes competitive moves in individual countries as part of a global competitive strategy.
7. ***Factor movement and start up strategy:*** Whether production factors are acquired locally or brought in by the company and whether the operation begins through an acquisition or start-up.

Managers must rank alternatives so they can easily modify (Step vi) as resource availability changes. A parent company may, for example, plan to remit dividends from one of its foreign subsidiaries back to itself. This may not be possible if a government puts foreign exchange control into effect.

Finally, headquarters and subsidiary management should agree on specific objectives for each subsidiary and devise way to measure both deviations from the plans and conditions that may cause such deviations.

### **14.4.2 Organisation Structure**

In order to achieve the plan, an appropriate setting-up of organisation structure (the formal patterns of their lines of communication and responsibilities), that groups/individuals and operation units in strategic ways require. The structure depends on many factors including:

1. The degree of multidomestic, global and transitional policies that are employed.
2. The location of the types of facilities.
3. The impact of international operations on total corporate performance. The form, method and location of operational units at home and abroad will affect taxes, expenses and control consequently, organisational structure has an important effect on the fulfillment of corporate objectives. The major structures of companies' international operations are given below:

#### **International Division Structure**

Grouping each international business activity into its own division puts internationally specialised personnel to handle various matters such as export documentation, foreign exchange transactions and relations with foreign governments. This strategy prevents duplication of these activities in more than one place in the organisation. It also enables the respective people to push for international expansion. However, an international division has to depend on the domestic divisions for products to sell, personnel, technology and other resources. But since domestic business managers are usually evaluated on the performance within the domestic divisions for which they are responsible, they may withhold their best resources from the international division to improve their own performance. Given the separation between domestic and foreign operation, this structure is probably best suited for multi-domestic strategy for which there is little integration and standardisation between domestic and foreign operations.

#### **Functional Division Structure**

This structure is popular among companies offering a limited range of products, particularly if the production and marketing methods are undifferentiated among them. Here, marketing people report to other marketing people, finance to other finance people and so on.

#### **Product Division Structure**

This structure is the most popular among international companies, because most companies' business involves a variety of diverse products. Because these divisions may have little in common, they may be highly independent of each other. As is true for the functional structure, the product division structure is well-suited for a global strategy because both the foreign and domestic operations for a given product reports to the same manager who can find synergies between the two. Most likely, there will be duplicated functions and international activities among the product divisions. Moreover, there is no formal means by which one product division can learn from another international experience. Finally, different subsidiaries from different product divisions within the same foreign country will report to different groups at headquarters, so synergy could be lost within countries if different subsidiaries don't communicate with each other or with a common manager.

#### **Geographic (Area) Division Structure**

Companies use geographic divisions, if they have large foreign operations that are not dominated by a single country or region (including the home country). This structure is more common to

European MNEs such as Nestle, than to US MNEs which tend to be dominated by the strong domestic market. This structure is useful when maximum economies in production can be gained on a regional rather than on global basis because of market size or the production technologies for the industry. The drawback is possibly the costly duplication of work among areas.

**Notes**

### Matrix Division Structure

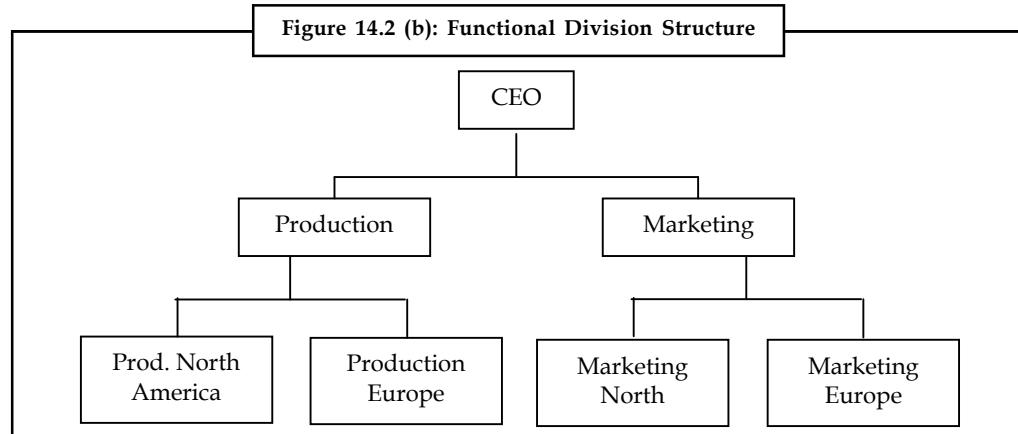
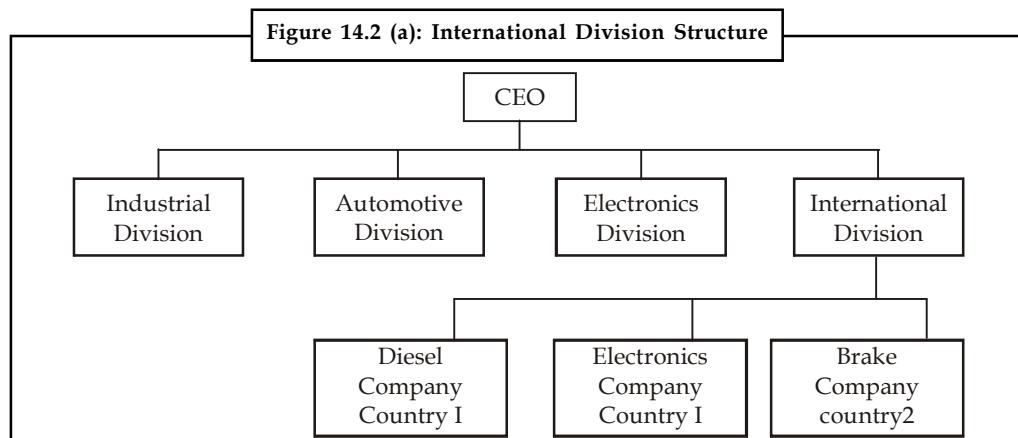
In this structure, a subsidiary reports to more than one group (functional, product or geographical). The structure is based on the concept that because each group shares responsibility over foreign operation, the group will become more interdependent, exchange information and exchange resource, with each other.



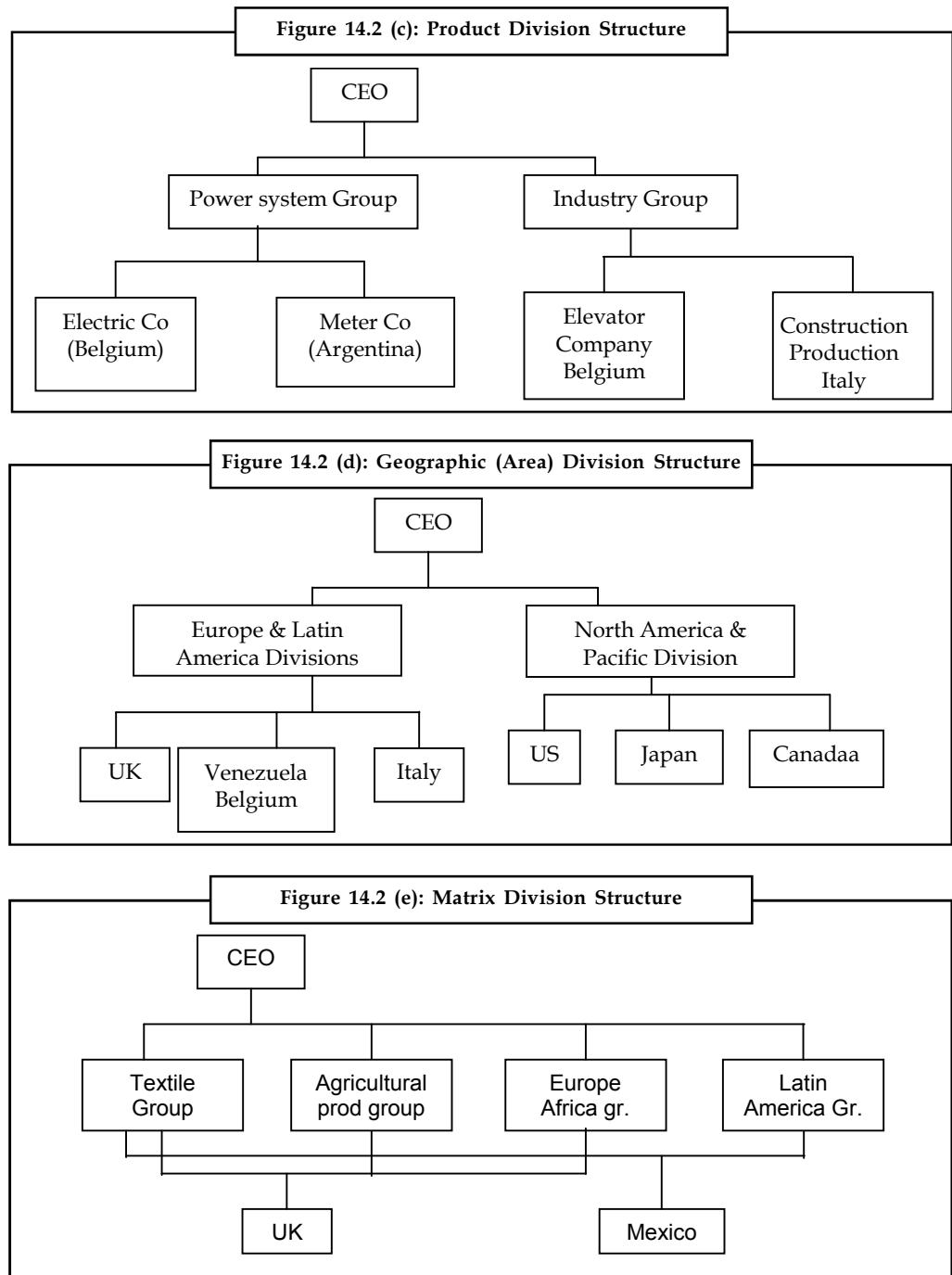
*Example:* Product group managers must compete among themselves to ensure that R&D personnel responsible to a functional group such as: production, develop technologies for their product groups.

These product group managers also must compete to ensure that geographic group managers emphasise their lines sufficiently. Not only product group but also functional and geographic groups must compete among themselves to obtain resources held by others in the matter. The matrix organisation has drawbacks that groups compete for scarce resources and how they enact their preferred operating methods.

The various structures are given below:



Notes



### Self Assessment

Fill in the blanks:

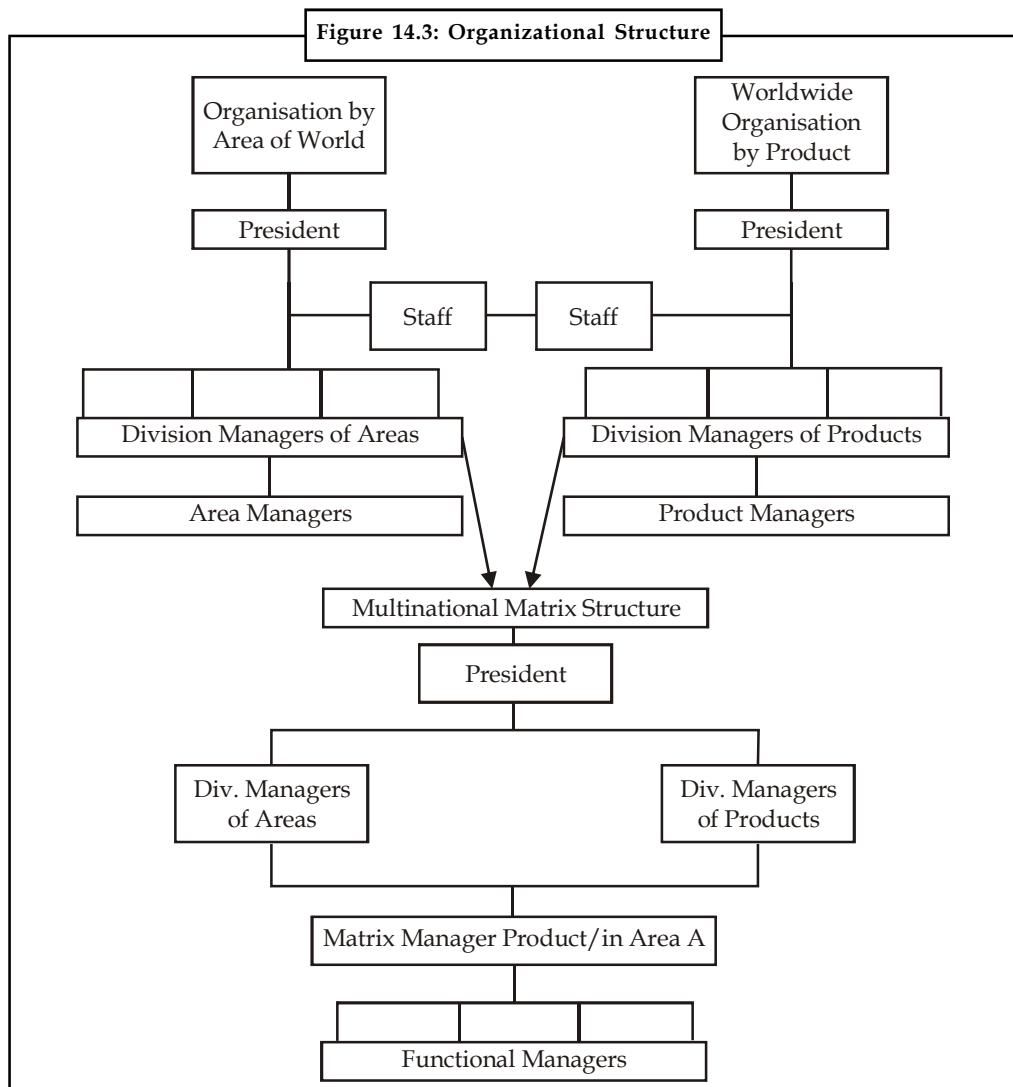
5. The ..... provides whether and where the company wants to be a leader.
6. ..... is popular among companies offering a limited range of products, particularly if the production and marketing methods are undifferentiated among them.

## 14.5 Matrix Organization Structure and the Multinational Firm

Notes

The problem of achieving coordination and efficiency in multinational enterprises differ from domestic product organization in two ways:

1. There is a greater geographical dispersion of various units of the enterprise. As a result, multinational firms often subdivide their organization by areas of the world; each division is responsible for all products in each geographical area. The divisions are often careful enough to employ fully each of the functions within the division and achieve significant economies of scale, with some loose coordination of each function among various divisions taking place at headquarters.
2. Such each division of a multinational firm is responsible for sale and sometimes, production of all the company's products in a given area of the world, little attention can be given to the development, in production and coordination of a given product for the company as a whole. This intensifies the need for the matrix structure.



In a multinational enterprise, the two dimensions of management that must be considered in the design of the organization structure are market area and product rather than product and

<b>Notes</b>	<p>function, it may be necessary depending upon the size of the organization to include a third, the functional dimension. The figure below depicts the evolution of a matrix organization structure by area and product from either product dimension structure or from an area division structure.</p> <p>The matrix organization provides us with a dual structure for managing both the product and market dimensions with the multinational firm. Under the matrix structure, a product manager is appointed for each product or product group alongwith an area manager for each geographical area.</p> <p>Product managers often assume roles similar to that of a programme manager having full responsibility for the profitability of the product on a worldwide basis and yet no formal authority over the functional descriptions employed on the product. The area manager has responsibility for overall profitability of his division and full authority over functional personnel assigned to that division. Basically, product managers of multinational firm are generally concerned with current business, new business, and technological developments of the product. They use their technical and business knowledge together with their influence and creditability to convince corporate and area managers of technical and business programmes that will improve the profitability of their product line on a worldwide basis.</p>
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#### **14.5.1 Location of Decision-making**

Basically, companies should choose a location based on a combination of the following three trade-offs:

1. *Balancing pressures for global integration versus pressures for local responsiveness:*
  - (i) Decisions on moving goods or other resources internationally are more likely to be made centrally.
  - (ii) Global standardisation usually reduces cost but some revenues can be lost in the process.
  - (iii) The more the foreign environment requires adaptation, the more pressure there is to decentralise.
  - (iv) Trans-national strategies imply gaining knowledge and capabilities from anywhere in the organisation and two-way information flows both horizontally and vertically.
2. *Balancing the capabilities of headquarters versus subsidiary personnel:*
  - (i) The more confidence there is in foreign managers, the more delegation occurs.
  - (ii) Contra centralisation may hurt local managers because they can perform as well and they do not acquire training through increased responsibility.
3. *Balancing the expediency versus the quality of decisions:*
  - (i) Companies must consider how long it takes to get help from headquarters vis-a-vis how rapidly a decision must be made.
  - (ii) More important decisions are made at higher organisation levels.

#### **14.5.2 Control in the Internationalization Process**

Various factors influence the extent of control needed at different stages of internationalisation.

1. *Level of importance:* The more important the foreign operations, the higher in the organisation structure they report.

- |  |              |
|--|--------------|
| <p>2. <b>Changes in competencies:</b> The larger the total foreign operations, the more likely that headquarters has specialised staff with international expertise. The larger the operations in a given country, the more likely that country unit has specialised staff.</p> <p>3. <b>Changes in operating forms:</b> The use of multiple operating firms such as exporting, licensing and joint ventures and the move from one to another may create the need to change areas of responsibilities in the organisation.</p> | <b>Notes</b> |
|--|--------------|

### **Control Mechanism**

These are the methods corporates use to help ensure that control is implemented.

#### **Corporate Culture**

Every company has certain common values its employees share. These constitute its corporate culture and form a control mechanism that is implicit and helps enforce the company's explicit bureaucratic control mechanism.



*Example:* Without setting explicit rules, a manager may conform to company tradition in terms of how they dress, how late they work, whether they socialise with other managers and whether they go to others in the company for advice. The incompatibility of organisational cultures is detrimental to the acceptance of knowledge, which MNEs move to transfer from operations in one country to operations in another to gain competitive advantage.

To try to overcome this problem, many companies encourage a worldwide corporate culture by promoting closer contact among managers from different countries. The aim is to convey a shared understanding of global goals and norms for reaching those goals, along with the transference of "best practices" from one country to another. Frequent transfers of managers among operations in different countries help develop increased knowledge of and commitment to a common set of values and objectives, fewer procedures, less hierarchical communication and less surveillance are thus, needed.

#### **Coordinating Methods**

Besides each type of organisation structure having advantages and disadvantages, companies have developed mechanisms to pull together some of the diverse functional, geographic (including international) and product perspectives without abandoning their existing structures. Some of the mechanisms are:

1. Developing teams with members from different countries for planning by building scenario on how the future may evolve.
2. Strengthening corporate staff (adding or creating groups of advisory personnel) so that headquarter and subsidiary managers with line responsibilities (decision making authority) must listen to different viewpoints – whether or not they take the advice.
3. Using more management rotation – for example, between domestic and international positions-to break down parochial views.
4. Keeping international and domestic personnel in closer proximity to each other - for example, by placing the international division in the same building or city as the product division.
5. Establishing liaisons among subsidiaries within the same country so that different product groups may get combined action in a given issue.

- Notes**
- 6. Developing teams from different countries to work on special projects of cross-national importance so that they may share viewpoints.
  - 7. Placing foreign personnel on the board of directors and top level committees to bring foreign viewpoints into top level decisions.
  - 8. Giving all decisions and subsidiaries credit for business resulting from combined efforts, so they are motivated to view activities broadly.
  - 9. Basing reward system partially on global results so that managers are committed to global as well as local performance.

### **Reports**

Headquarters need timely reports to allocate resources, correct plans and reward personnel. Further reports are used to evaluate the performance of subsidiary personnel in order to reward and motivate them. Since all information exchange does not occur through formalised written reports, certain members of the corporate staff spend much time visiting subsidiaries.

The following points may be noted:

- 1. Companies should evaluate managers on things they can control. What is within the subsidiary manager's control varies from company to company (because of decision making authority differences) and from subsidiary to subsidiary (because of local conditions).
- 2. Companies evaluate results in comparison to budgets.
- 3. It is hard to compare countries using standard operating ratios.
- 4. A system that relies on a combination of measurements is considered more reliable than one that doesn't.
- 5. Management should re-evaluate information needs periodically to keep costs down and it should ensure that information is being used effectively.

### **Control in Special Situations**

Acquisition, shared ownership and changes in strategies create control problems. These are discussed below:

**Acquisition:** A policy of expansion through acquisition can create some special control problems. Acquisition can lead to overlapping geographical responsibilities and markets as well as new lines of business in which the corporate manager has no experience. Further, the acquiring company's culture may be very different from that of the acquired one. Again, attempts to centralise certain decision making or to change operating methods may result in distrust, apprehension and resistance to change on the part of the acquired company. Resistance may come from government authorities who want to protect their domestic economies. These authorities may use a variety of means to ensure that decision-making remains vested within the country.

**Shared ownership:** Shared ownership limits the flexibility of corporate decision making. For example, Nestle shares ownership with Coca-Cola in a joint venture for the production and sale of canned coffee and tea drinkers. Nevertheless, there are administrative mechanisms that enable a company to gain control even with a minority equity interest. These mechanisms include spreading the remaining ownership among many shareholders, contract stipulations that board decisions require more than a majority (giving veto power to minority shareholders), dividing equity into voting and non-voting stock and side agreements on who will control

decision-making. A company can also maintain control over some assets the subsidiary needs such as: a patent, a brand name or a raw material.

**Notes**

**Changes in strategies:** Changes in strategies may result because of shift from multidomestic to trans-national or global operation or to shift control from subsidiary to headquarters or vice-versa. Because of changes, there will be need for new reporting relationships, changes in the type of information collected and a need for new performance appraisal systems. In addition, there are human resource problems as well.

### **Types of Subsidiaries and How They Affect Control Strategies**

A company establishing a subsidiary in a foreign country can choose a number of alternative forms. Some distinctions are worth mentioning so that one can understand those considerations. In addition to differences in liabilities, firms vary in terms of:

1. The activity of the parent to sell its ownership.
2. The number of shareholders required to establish the subsidiary.
3. The percentage of foreigners who can be on the board of directors.
4. The amount of required public disclosure.
5. Whether equity can be contributed by non-capital contribution such as goodwill.
6. The types of business (product) those are eligible.
7. The minimum capital required for establishing the subsidiary.



*Notes* Before making a decision on a legal operating form, an MNE should analyse all of these differences in terms of its corporate objectives.

### **Self Assessment**

Fill in the blanks:

7. In a multinational enterprise, the two dimensions of management that must be considered in the design of the organization structure are ..... and .....
8. Shared ownership limits the flexibility of corporate .....

### **14.6 Exchange Risk Management**

Foreign exchange exposure results in foreign exchange risk due to anticipated variability in exchange rates. As business becomes increasingly global, more and more firms find it necessary to pay careful attention to foreign exchange exposure and to design and implement appropriate strategies to handle such risks. Suppose, for example, that the US dollar substantially depreciates against the Japanese yen, the change in exchange rate can have significant economic consequences for both US and Japanese firms.



*Example:* It can adversely affect the competitive position of Japanese car makers in the highly competitive US market by forcing them to raise dollar prices of their cars by more than their US competitors do.

<b>Notes</b>	Changes in exchange rates can affect not only firms that are directly engaged in international trade but also purely domestic firms.
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*Example:* A US bicycle manufacturer that sources only domestic materials and sells exclusively in the US market with no foreign currency receivables or payables in its accounting book, can be subject to foreign exchange exposure if it competes against imports say from a Taiwanese bicycle manufacturer.

#### 14.6.1 How Distinguished from Business Risk

Doing any type of business is subject to risk. That distinguishes entrepreneur's willingness to take risks from other modes of investment. Broadly speaking, business risk can be divided into two categories – core business risk and environmental risk.

Core business risks are operational risks such as: an unsuccessful new product launch, a new technology which does not perform up to expectations, interruption in raw material supplies, labour problems, cyclical demand fluctuations and so forth.



*Did u know?* Environmental risks arise out of unpredictable fluctuations in financial variables such as exchange rates, interest rates and stock prices, macroeconomic shocks such as, a sudden steep rise in prices of important commodities like crude oil, shifts in government policies. Financial risks are thus, a subset of environmental risks.

While core business risks are peculiar to a particular firm, environmental risks are pervasive and affect all firms or at least all the firms in a given industry. However, the direction and magnitude of the impacts do vary from firm to firm. Thus, a depreciation of the exchange rate might have a beneficial impact on the exporting firm while it hurts an importing firm.

#### 14.6.2 Defining Exposure and Risk

The impact of fluctuation in financial prices can be illustrated by a number of situations:

1. An appreciation of the value of a foreign currency (or equivalent, a depreciation of the domestic currency) increases the domestic currency value of a firm's foreign currency assets and liabilities such as: foreign currency receivables and payables, bank deposits and loans, etc.
2. It will also change domestic currency cash flows from exports and imports.
3. An increase in interest rates reduces the market value of a portfolio of fixed rate bonds and may increase the cash outflow on account of interest payments.
4. Acceleration in the rate of inflation may increase the value of sold stocks, the revenues from future sales as well as the future costs of production.

The above demonstrates that the firm is "exposed" to unforeseen exchange in a number of variables in its environment. These variables are also called risk factors.

Uncertainties arising out of fluctuations in exchange rates, interest rates and relative prices of key commodities such as crude oil, copper, etc. create strategic exposure and risk for a firm.

The long-term response of the firm to these risks can involve significant changes in the firm's strategic posture. Choice of product-market combinations, souring of inputs, choice of technology, location of manufacturing activities, strategic alliances and so forth.

We have seen that exchange rates, interest rates and inflation rates are intimately interrelated and in turn relate to a whole complex of macroeconomic variables. In many cases, it is difficult to locate the effect of changes in any of them on the firm's assets, liabilities and cash flow.

**Notes**

The terms exposure and risk though often used interchangeably are not identical. Exposure is a measure of the sensitivity of the firm's performance, however, measured to fluctuation in the relevant risk factor. While risk is a measure of the extent of variability of the performance measure attributable to the risk factor.



*Notes*

Following are the important points about the definition of exposure and risk:

1. Value of assets and liabilities or operating income is denominated in the functional currency of the firm. This is the primary currency of the firm in which its financial statements are published. For most firms, it is the domestic currency of the firm.
2. Exposure is defined with regard to the real values i.e., values adjusted for inflation. While theoretically, this is the correct way of assessing exposure, in practice, due to the difficulty of dealing with an uncertain inflation rate, this adjustment is often ignored i.e., exposure is estimated with reference to changes in nominal value.
3. The definition stresses that only anticipated changes in the relevant risk factor are to be considered. The reason is that markets have already considered allowance for anticipated changes. For example, an exporter invoicing a foreign buyer in the buyer's currency will build an allowance for the expected depreciation of that currency into the price. A lender will adjust the rate of interest charged in the loan to incorporate an allowance for the expected depreciation.
4. From the operational point of view, how do we separate given change in exchange rate or interest rate into anticipated and unanticipated components since only the actual change can be observed? One possible option of estimating what will be the exchange rate after 3 months from the transaction date is to consider a firm which has a 90 day payable amounting to US\$ 500,000, arising out of a raw material import transaction. The current spot rate is ₹ 43.60 per dollar and the three months forward rate is ₹ 43.80. Three months later, the spot rate turns out to be ₹ 44.00. Thus, the unanticipated depreciation of the rupee is 44-43.80 or ₹ 0.20 per dollar. The loss on account of the increase in the rupee value of the payable is ₹ 100,000.

Now let us introduce the concept of risk:

Suppose a financial consulting firm gives the following "forecast" of the value of spot exchange 3 months from now. In our view, the most likely value of the spot rate three months from now is ₹ 44.0, but it could be shooting as high as ₹ 44.50. There is a very small probability that the dollar could fall to ₹ 43.40.

Given this view, the best scenario for the firm would be dollar falling to ₹ 43.40 (since the company has to pay in US\$ after 3 months) and the worst case would be dollar shooting up to ₹ 44.50. The rupee outlay on settling the payable could be as high as ₹ 24.75 million or as low as ₹ 24.20 million. Exchange rate risk is a measure of variability of the value of an item attributable to the fluctuations in the underlying exchange rate. It depends upon the size of the exposure (transaction) and the extent of fluctuation expected in the underlying exchange rate. Exchange rate risk can be captured by analysing the "best case" and "the worst case" scenarios to gauge the maximum possible variation in the value of the item under consideration.

**Notes**



*Caution* In the most formal way, we must use the statistical concept of variance or standard deviation to measure financial risk.

In the above example, the value of the item in the foreign currency was contractually fixed.



*Example:* A firm exports denim jeans to the US, selling a pair of jeans at USD 50. The exchange rate is ₹ 44.00, its operating costs are ₹ 1600 per pair of jeans. Thus its operating margin on export sales is ₹ 2200 – ₹ 1600 = ₹ 600 per pair. Over the next year, US inflation is expected at 5% p.a., Indian inflation is at 10% per annum and by the year end, the exchange rate depreciates to ₹ 45/-. Assume that it raises its price in the US market by 5% (based on inflation rate of 5%) to ₹ 52.50 and its operating costs go up by 10% (the Indian rate of inflation) to ₹ 1760. Its operating margin per unit is now  $(52.50 \times 45) - 1760 = 2362.50 - 1760 = 602.50$ .

In real terms adjusted for inflation at 10%, the operating margin has shrunk from ₹ 600 to  $(602.50 / 1.1)$  ₹ 547.72.

Thus, it will be observed that in the present case, the impact of exchange rate fluctuations in the operating cash flow depends upon several factors:

1. Change in price
2. Quantity response to price change
3. Changes in unit costs and
4. Changes in exchange rate

Unlike the case of contractually fixed items like a foreign currency receivable or payable, we cannot access the impact of exchange rate fluctuations on the firm's future, cash flow and profitability unless we know the structure of the market in which the firm sells, price sensitivity of demand, currency composition of its operating cost and the structure of the market in which it buys its inputs. These, in turn, will have a bearing on the firm's competitive position in the output markets.

In the above situation, precise assessment of exposure of future cash flow and profit is possible by:

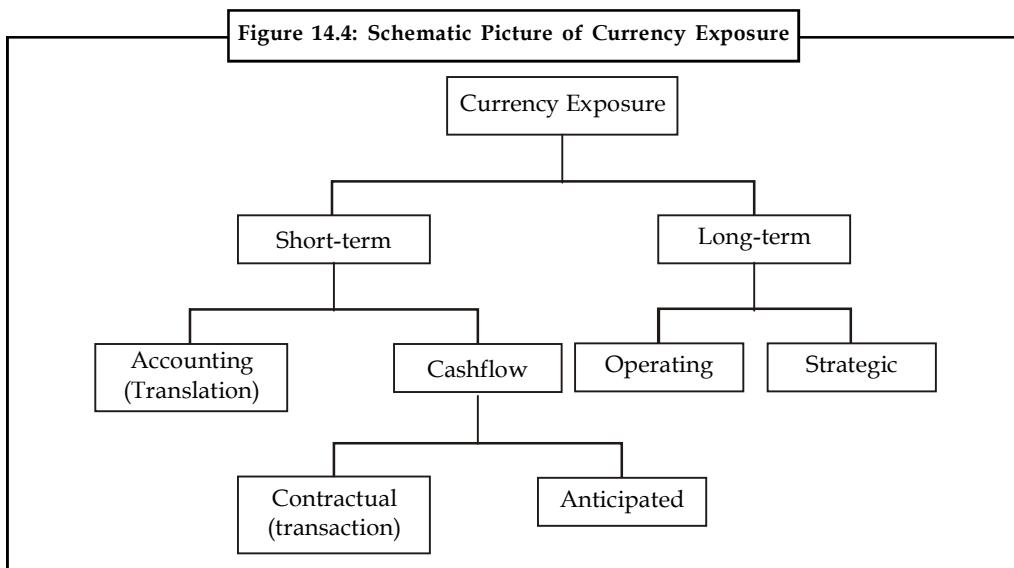
1. Constructing an alternative scenario in which the relevant risk factor e.g. exchange rate takes specific values and alternate future cash flows for each scenario. This will give an estimate as to how sensitive future cash flows are to fluctuations in the exchange rate. This requires a thorough understanding of the firm's business including its competition, customers and cost structure.
2. Alternatively, one can adopt a statistical approach using past data to access the influence of the relevant risk factor on a target performance variable such as, cash flow.

### **Classification of Currency Exposure**

Figure 14.4 presents a schematic picture of currency exposure. The first group of exposures known as accounting exposures relate to items that currently appear in the balance sheet and income statement of the firm.

Within this group, we have two further categories, e.g. transaction exposure and translation exposure.

Notes



### 14.6.3 Transaction Exposure

This is a measure of the sensitivity of the home currency value of assets and liabilities which are denominated in foreign currency, to unanticipated changes in the exchange rates, when the assets or liabilities are liquidated. The foreign currency values of these items are contractually fixed i.e., they do not vary with exchange rate. You may recall the example above of a firm with USD 100,000 payable. This is also known as contractual exposure.

Some examples that lead to transaction exposure are:

1. A currency has to be converted in order to make or receive payment for goods and services.
2. A currency has to be converted to repay a loan or make an interest payment (for foreign currency loan) or receive a repayment of loan or an interest on loan and advances (denominated in foreign currency).
3. A currency has to be converted to make a dividend payment, royalty payment (to overseas shareholders or overseas collaborators).

In all the cases, the foreign currency value of the item is fixed, the uncertainty pertains to home currency value. For example, if a firm has entered into a contract to sell cars to foreign customers at a fixed price denominated in foreign currency, the firm would be exposed to exchange rate movements till it receives the payment and converts the receipts into the domestic currency. The exposure of a company in a particular currency is measured in net terms i.e., after netting of potential cash inflows with outflows.



*Notes* The important points to be noted are:

1. Translation exposures usually have short-term horizons and
2. Operating cash flows are affected.

Notes

#### **14.6.4 Translation Exposure**

Translation exposure arises from the need to “translate” foreign currency assets or liabilities into the home currency for the purpose of finalising the accounts for the given period. A typical example of a translation exposure is the treatment of foreign currency loan (medium term) to finance. The import of capital goods worth US \$ 1 million. When the import materialised, the exchange rate was ₹ 43/- per \$. The imported fixed asset was capitalised in the books of the company at ₹ 430/- lakhs. In the ordinary course and assuming no change in the exchange, the company would provide depreciation on the asset values at ₹ 430/- lakhs for finalising the accounts for the year in which the asset was purchased.

Suppose at the time of finalisation of the accounts, the exchange rate has moved to ₹ 440 involving a translation loss of ₹ 10 lakhs. Under the earlier accounting standards, the effect of translation, gain or loss was capitalised by altering the book value of the fixed asset financed by the loan and consequently the provision of higher depreciation was required to reduce the net profit.



*Did u know?* As per IAS (certified) with effect from 1/4/2004, translation differences have now to be accounted in the profit and loss account.

#### **14.6.5 Operating Exposure (also known as Economic Exposure)**

The second group of exposure consists of contingent and competitive exposures and together also known as operating exposures. The principal focus is on items which will have an impact on cash flows of the firm and whose values are not (yet) contractually fixed in foreign currency terms.

Of the two categories, contingent resources have a much shorter time horizon. Typical situations giving rise to such exposure are:

1. An import or export deal is being negotiated. Quantities and prices are to be finalised. Fluctuation in exchange rate will probably influence both and then it will be converted into transaction exposure.
2. The firm has submitted a tender bid on an equipment supply contract. If the contract is awarded, transaction exposure will arise.
3. A firm imports a product from abroad and sells it in the domestic market. Supplies from overseas are received continuously but for marketing convenience, the firm publishes selling price in home currency which holds good for six months. While the sales proceeds in domestic currency may be more or less certain, costs measured in home currency are exposed to currency fluctuations.

In all the cases, currency movement will affect future cash flows.

Competitive exposure is the most crucial dimension of currency exposure. Its home horizon is longer than that of transaction exposure, say around three years. The focus is on future cash flows and hence a long run survival and value of the firm. We have already discussed this kind of exposure in our example of the denim jeans exporter.

#### **14.6.6 Strategic Exposure**

**Notes**

Competitive exposure is often referred to as "Statistic Exposure" because it has significant implications for some strategic business decisions. It influences the firm's choice of markets, products, source of inputs, location of manufacturing activity and decisions as to whether foreign operation should be started.

A number of examples from recent history clearly bring out the nature of operating exposure:

1. The increase in dollar during the first half of the 1980s eroded the competitive position of many US firms where the costs were dollar denominated.



*Example:* Kodak found that their sales were spread all over the world, whereas the costs were dollar denominated. They faced stiff competition from Japanese firms such as Fuji both in the US market as well as third country markets.

2. Further, when the dollar started falling against the yen and the Deutsche mark around mid-1985 and continued to fall for over two years, Japanese and German car makers found their operating margins being squeezed. They responded by starting manufacturing in the US and partly by moving up into premium priced luxury cars where consumer sensitivity to price increases is relatively less.
3. At home, Indian manufacturers of cars and two-wheelers with significant import content denominated in yen found that strengthening of yen resulted in cost increase which they would not allow to pass on to the consumer because of depressed demand conditions and competitive consideration.
4. US pharmaceutical multinationals like Merck found that during the period of strong dollar, their cash flows denominated in dollars tend to shrink while most of their R&D expenditures are denominated in dollars. A shortage of internally generated cash tends to have an adverse impact in their R&D budgets which is a crucial factor in their long run competitiveness.
5. The significant fall in South Asian currencies starting mid-1997 hurt Indian exports in the Western markets as some of these countries are India's competitors in these markets.

In all these cases, exchange rate changes coupled with concomitant changes in relative cost had a significant impact on the firm's ability to compete effectively in particular product market segments, to undertake good investment projects and thus to enhance their long run growth potential.

#### **14.6.7 Management of Exchange Risk**

**Transaction Exposure:** A firm is subject to transaction exposure when it faces contractual cash flows that are fixed in foreign currencies. Suppose that a US firm sold its product to a German customer on three month credit terms and invoiced in Euro. When the US firm receives Euros in three months, it will have to convert (unless it hedges) the Euro into dollar at the spot exchange rate prevailing on the maturity date, which cannot be known in advance. As a result, the dollar receipt from this export sale becomes uncertain; should the Euro appreciate (depreciate) against the dollar, the dollar receipt will be higher (lower).

The above example suggests that whenever the firm has foreign currency denominated receivables or payables, it is subject to transaction exposure and their settlements are likely to affect the firm's cash flow position. The various ways of hedging transaction exposure are as follows:

**Notes**

**Financial Contracts**

1. Forward market hedge
2. Future market hedge
3. Option market hedge
4. Money market hedge

**Operational Techniques**

1. Exposure netting
2. Heading and lagging
3. Hedging by choosing the currency of invoice
4. Hedging through sourcing

**Self Assessment**

Fill in the blanks:

9. Changes in ..... can affect not only firms that are directly engaged in international trade but also purely domestic firms.
10. Translation exposure arises from the need to “translate” foreign currency assets or liabilities into the ..... for the purpose of finalising the accounts for the given period.



*Task* Give examples of various multinationals that follow each of the following given structures.

**14.7 Summary**

- In multinational organizations the top management's toughest challenge is to balance the company's global needs with its need to adapt to country level differences.
- Several factors like distance, diversity, uncertainty, degree of control etc make control more difficult internationally than it is domestically.
- The five aspects of the international control process are: (i) Planning, (ii) Organisation Structure, (iii) Location of decision making, (iv) Control mechanism, and (vi) Special situations including the dynamics of control.
- Foreign Exchange exposure results in foreign exchange risk due to anticipated variability in exchange rates.

**14.8 Keywords**

**Income Tax:** An income tax is a direct tax i.e., one that is paid directly by the tax payer on whom it is levied.

**Macro Risk:** Where all foreign operations are affected by adverse political developments in the host country.

**Tax Haven:** A tax haven country is one that has a low corporate income tax and low withholding tax rates on passive income.

Notes

**Transaction Exposure:** This is a measure of the sensitivity of the home currency value of assets and liabilities which are denominated in foreign currency, to unanticipated changes in the exchange rates, when the assets or liabilities are liquidated.

**Translation Exposure:** Translation exposure arises from the need to "translate" foreign currency assets or liabilities into the home currency for the purpose of finalising the accounts for the given period.

**Value Added Tax:** A Value Added Tax (VAT) is an indirect national tax levied on the value added in the production of a good (or service) as it moves through the various stages of production.

**Withholding Tax:** A withholding tax is a tax levied on passive income earned by an individual or corporate of one country within the tax jurisdiction of another country.

## **14.9 Review Questions**

1. What actions can a firm take to minimise the global tax liabilities? On ethical grounds, can such actions be justified?
2. How might an MNC use transfer pricing strategies? How do import duties affect transfer pricing policies?
3. What are the various means the taxing authority of a country might use to determine if a transfer price is reasonable?
4. Discuss how an MNC might attempt to repatriate blocked funds from a host country.
5. Affiliate A sells 5000 units to affiliate B per year. The marginal income tax rate for affiliate A is 25% and for B is 40%. The transfer price per unit is currently \$ 2000 but it can be set at any level between \$ 2000 and \$ 2400. Derive a formula to determine how much annual after tax profits can be increased by selecting the optimum transfer price.
6. Affiliate A sells 5000 units to affiliate B per year. The marginal income tax rate for affiliate A is 25% and for B is 40%. Additionally, affiliate B pays a tax deductible tariff of 5% on imported merchandise. The transfer price per unit is currently \$ 2000 but it can be set at any level between \$2000 to \$2400. Derive (a) the formula to determine the effective marginal tax rate for affiliate B and (b) a formula to determine how much annual after tax profit can be increased by selecting the optimum transfer price.

## **Answers: Self Assessment**

- |                         |                                  |
|-------------------------|----------------------------------|
| 1. Income tax           | 2. Value Added Tax (VAT)         |
| 3. Foreign subsidiary   | 4. Tax haven                     |
| 5. Strategic intent     | 6. Functional division structure |
| 7. market area, product | 8. Decision making               |
| 9. Exchange rates       | 10. Home currency                |

Notes

### **14.10 Further Readings**



Books

Anthony, Robert N and Govindrajan, Vijay, "*Management Control System*", Tata McGraw Hill.

Kaura, Mohinder N, "*Management Control and Reporting System*", Response Books.

Maciariello, Joseph A. and Kirby Calvin J., *Management Control Systems*, 2nd Edition, Prentice Hall of India Private Limited.

Merchant, Kenneth A, "*Management Control System: Text and Cases*", Pearson Education Asia.

Saravanavel, P, "*Management Control System*", Himalaya Publishing House.



Online links

<http://books.google.co.in/books>

<http://www oppapers com/essays/Management-Control-In-Mnc-s/309520>

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978-93-90164-59-2



A standard linear barcode representing the ISBN 978-93-90164-59-2.

9 789390 164592