स्वाध्याय स्वमन्थन स्वावलम्बन

UTTAR PRADESH RAJARSHI TANDON OPEN UNIVERSITY

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MBA-3.4 -2'6
Management Control Systems

FIRST BLOCK
Basic Concepts

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BLOCK 1 BASIC CONCEPTS

Every organisation has certain objectives and goals. How well these objectives and goals are accomplished depends on how well the individuals in groups (units or departments) at various levels in the organisation have performed their tasks. Management Control attempts to bring about this integration and is thus vital for the success of any organised human endeavour. The subject of management control draws upon other subjects like Economics, Management Accounting, Management Science, and Behavioural Sciences.

In this introductory block we introduce you to the basic concepts of management control and management control systems. This block has two units.

Unit 1 gives an introduction of the management control systems. It begins by discussing the general concept of control and then goes on to differentiate management control from some other related concepts viz., strategic planning and operational control. The characteristics of management control systems and the general considerations in designing them are explained. Towards the end, the relationship between management control system and responsibility accounting, and the place of informal management control in an organisation are discussed.

Unit 2 deals with the concept of responsibility centres. The latter emerge as a result of delegation of authority and assignment of responsibility to the units of the organisation. The various patterns of delegation which give rise to responsibility centres are explained with suitable diagrams. The creation of responsibility centres often requires appropriate modifications in the organisational structure, and the accounting and evaluation systems. These and the various types of responsibility centres are explained. The establishment of the responsibility centres within the organisation requires careful planning; the major steps involved in this process are described. Finally, some basic issues concerned with the evaluation of the performance of responsibility centres and the concept of responsibility accounting are discussed.

UNIT 1 MANAGEMENT CONTROL SYSTEMS : AN INTRODUCTION

Objectives

The objectives of this unit are :

- to familiarise you with management control systems in general
- to explain the various concepts of control
- to contrast management control with strategic planning and other control concepts
- to discuss the characteristics of and general considerations in designing and implementing management control systems

Structure

1.1 INTRODUCTION

In this unit, we will acquaint you with the theoretical framework of Management Control Systems (MCS). The main focus of this units is to acquaint you with the system or say, structure and processes by which top management can control the performance of various managers in the organisation. In order to provide you some general ideas about management control systems, we shall first explain the concepts of control, organisational control and management control. With a view to facilitate your understanding about the nature of management control, we shall contrast management control with strategic planning and control, operational control, responsibility accounting and informal management control. Before closing this unit we shall also highlight the characteristics of formal management control systems and pinpoint broad considerations in designing and implementating management control systems, in general.

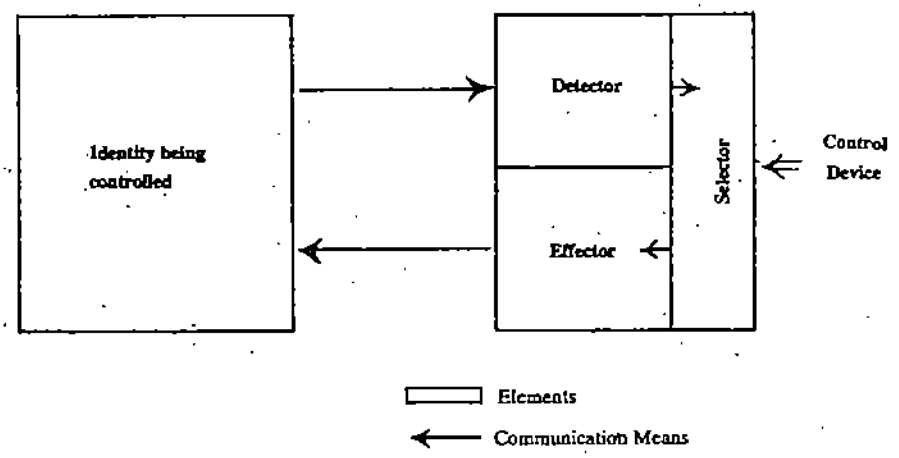
1.2 GENERAL CONCEPT OF CONTROL

Control should be no new word to you at this stage. And as you might be aware, control is a process of ensuring that the actual state or condition is in line with the desired state or condition. In other words, control aims to detect and correct deviations in a system's state in order to achieve the desired (standard) state. If you recall variance analysis for cost control (discussed in Block 3 of MS-4 : Accounting and Finance for Managers), you would remember that it involved setting the cost

standards, observing actual costs, determining and analysing the deviations of actual costs from standard costs, preparing variance report and initiating corrective action(s) to avoid or at least, reduce the deviations. This is just one example of control. In the context of machine, man, or an organisation of men and machines, control has four common elements :

- One, a measuring device which detects the actual state of the variable under control, sometimes called **detector.**
- Two, an assessing device which, usually by comparing, show the difference or gap between the actual state and the desired state of variable under control, sometimes called **selector.**
- Three, an altering or correcting device which carries out the necessary alteration or correction in the actual state of the variable to achieve the desired state, sometimes called **effector.**
- Besides these three elements namely, detector, selector and effector, the control system also includes the **means for communicating information** such as directives, guidelines, feedback, etc., among these elements. These elements of control system are shown by a diagram in exhibit 1.1

Exhibit 1.1 : Elements of A Control System



1.3 ORGANISATIONAL CONTROL

The concept of control system originated in the field of engineering but it has been adapted to management in course of time. In an organisational context also the control system has the same essential elements as those described above under 1.2. An organisation has a desired state which is specified in the form of its goals and objectives. Information about the actual state of the organisation is compared with the desired state, and if there is a significant difference, action is taken. Tannenbaum (1968) states that it is the function of control to bring about conformance to organisational requirements and achievement of the ultimate purposes of the organisation.

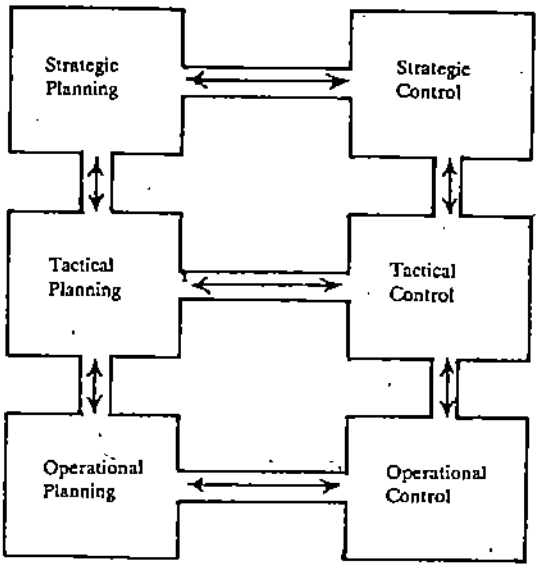
It should not, however, be difficult to appreciate that the control process in an organisation is much more complicated than the control process in simple situations such as thermostat control of a furnace or control of body temperature in most mammals or control of an automobile by its driver. In an organisation, control involves a variety of functions such as :

- **planning** what the organisation should do,
- **coordinating** the activities of several parts of the organisation,

- generating performance information,
- evaluating information and, deciding what action, if any, should be taken
- influencing people to change their behaviour, and
- processing and communicating information that is used in the other functions.

Anthony and Dearden (1977) state that there are many types of control functions in an organisation, and they differ in important ways. Also, there are several types of planning, some of which are closely related to control and others not so closely related. These planning and control activities could be classified into three categories viz., strategic planning, management control, and operational control. Based on their assertion that planning and control are "two sides of the same coin". Lorange, Morton and Ghoshal (1986), define the spectrum of organisational planning and control as a three-tier construction comprising strategic planning and control, tactical planning and control and operational planning and control as depicted in Exhibit 1.2.

Exhibit 1.2 : Organisational Planning and Control Spectrum



In a way the three tiers of organisational planning and control depicted in Exhibit 1.2 correspond to the three levels of management popularly known as top management, middle management and lower management in the context of a private sector organisation. It is pertinent to note that in the case of public enterprises the spectrum of management decisions, must go beyond the traditional enterprise contour and incorporate one more managerial hierarchy, namely, government decision makers. Another thing which clearly emerges from Exhibit 1.2 is the linkage within and between organisational planning and control systems across the spectrum of management decisions. No doubt, these processes cannot be separated into mutually exclusive sets, but in the interest of clear understanding of the boundary of management control systems, we shall attempt to delineate and discuss these issues one by one.

1.4 MANAGEMENT CONTROL

A generally accepted definition of management control, given by Anthony and Dearden (1977), reads as follows :

> Management control is the process by which managers assure that the resources are obtained and used efficiently and effectively in the accomplishment of the organisation's goals.

Taking an expanded view of this definition, we may pinpoint important features of management control as follows :

- Management control is a process or set of actions such as programming, budgeting accounting, analysing, monitoring, evaluating and reporting the performance of individual heads of sub-divisions or units in an organisation.
- Management control is exercised by the coordinating agency which, in a private sector enterprise, is the top management and in case of public sector, the government decision makers.
- Management control is focused on controlling the performance of individual managers rather than the organisation as a whole.
- Management control is intended to aid the achievement of organisational goals.
- Management control is concerned both with the efficiency and effectiv performance. Efficiency, in simple words, is the amount of output per uni and effectiveness is the ratio of actual output to the intended or target Stated differently, an efficient manager is one who does whatever he does w... lowest consumption of resources and effective he is if only he or she make's an adequate contribution to the accomplishment of goals of the organisation.

Activity 1

a) List three basic elements of a control device.

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b). List various types of controls which operate in an industrial organisation.

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c) What in your opinion should be the objective of management control in a servic organisation?

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1.5 MANAGEMENT CONTROL AND STRATEGIC PLANNING AND CONTROL

In order to further appreciate the nature of management control, we shall now describe strategic planning and control and contrast it with management control. Strategic planning has been defined as the process of identifying the goals of the organisation and formulating broad strategies to attain these goals. Strategic planning is thus a process concerned with the formulation of long range, strategic, policy type plans that determine (and might change) the character or direction of the organisation. Obviously, it means evolving the physical, financial and organisational framework within which operations are carried on. Lorange et al. (1986) defined strategic planning and control as the processes by which managers ensure firm's (long term adaptation) to its environment, and deal primarily with setting basic strategic directions within the environmental contexts. Strategic control, specifically, has been defined as the process by which management verifies and evaluates the correctness of the underlying assumptions of its strategic plan.

A quick comparison between strategic planning and control, and management control at this stage would readily throw up the following points of distinction :

- Strategic planning focuses on a single aspect of the corporate life at a time whereas management control focuses on all the operations of different sub-divisions or units of an organisation. The acquisition and dipositon of major facilities, creation of divisions or subsidiaries, research and development of new products, and sources of new permanent capital belong to the domain of strategic planning. The focus of management control extends to the total operations of divisions, plants, etc.
- The domain of strategic planning comprises unstructured or unprogrammed decisions whereas management control is predominantly rhythmic and regular.
- The nature of information required for strategic planning tends to be tailor-made for the problem, largely external, futuristic and less accurate whereas management control requires integrated, largely internal, historical and accurate information.
- Strategic planning often uses techniques like SWOT analysis (strength, weaknesses, opportunities and threats analysis) whereas management control relies on budgeting.
- Strategic planning is a creative and analytical activity whereas management control is largely administrative and persuasive in nature.
- The time frame of strategic plans tends to be long say beyond one year whereas the management control operates by an year, quarter or even smaller time frames.
- The appraisal of strategic plan is extremely difficult compared to management control which is relatively easy to evaluate.

1.6 MANAGEMENT CONTROL AND OPERATIONAL CONTROL

Operational control is yet another category of control which operates in organisations. In simple words, it ensures that the specific operations or tasks are carried out efficiently and effectively. Some of the ways in which management control differs from operational control are highlighted hereunder :

- Management control focuses on all the operations of a sub-division or unit of an organisation whereas the focus of operational control is limited to a single task or transaction. Examples of activities for which management control is applicable are the total operations of most manufacturing plants, marketing function and the work of staff units of all types. Examples of tasks susceptible to operational control are the direct production operations of most manufacturing plants, production scheduling, inventory control, the order taking type of selling activity, and order processing, premium billing, pay-roll accounting and cheque handling.
- The domain of operational control involves little judgment and greater reliance on rules whereas in management control there is greater degree of judgment and subjective decision making.
- The information needed for operational control is often tailor-made to the operation, non-financial, precise and in real time whereas management control often uses integrated, financial, futuristic and historical information, even approximations sometime.
- The time horizon of operational planning and control tends to be day-to-day whereas management control works with weekly, monthly or yearly time frames.
- The techniques of Operations Research (OR) find wide applications in the area of operational control as the activities are programmable but management control has to work with diverse information generated through Management Information System (MIS) and Decision Support System (DSS).

Activity 2

a) List four points of distinction between management control and strategic planning.

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b) List four points of distinction between management control and operational control.

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1.7 CHARACTERISTICS OF MANAGEMENT CONTROL SYSTEMS

We may now pinpoint the principal characteristics of management control systems as follows :

- It embraces the entire operations of an organisation but takes, a segmental instead of a holistic view.
- It focuses on programmes and responsibility centres. Programmes are the principal activities of an organisation and responsibility centres means sub-divisions or segments or units of an organisation headed by responsible managers.
- It is usually built around financial responsibility, say, for cost, revenue, profit and investment, but uses non-financial measures based on key or critical variables as well. The principal types of financial responsibility are classified as standard cost centres, discretionary cost centres, revenue centres, profit centres and investment centres. **Standard cost centres** can be exemplified by foremen in a factory whose responsibility is specified in standard quantities of direct labour and material required for each unit of output. He is also usually responsible for a flexible overhead expense budget, and his objective is to minimise the variance between the standard/budgeted cost and actual cost. **Discretionary cost centres** include most administrative departments viz. accounting department, legal department, labour relations department, factory office, corporate office. There is no practical way to establish input-output relationship in an engineering sense for these departments. The management, therefore, makes use of their best judgment (discretion), to set up cost budget for these departments. **Revenue centres** can be best illustrated by the sales departments whose managers do not have authority to lower price but are judged by the sales revenue. **Profit centres** are units such as a product division, where the manager is responsible for maximising the profit i.e. revenue minus cost. **Investment centres** are units where the manager is responsible for maximising the profitability i.e. profits in relation to the magnitude of investment employed.
- The process of management control invariably comprises programming, budgeting, accounting and evaluating the performance of individual managers. Programming is the process of selecting the principal activities to be undertaken, normally in the course of the ensuing year. Budgeting is a process of expressing the annual operational plan in monetary terms viz. cost, revenue, profit etc. Accounting includes recording, analysing and reporting the actual performance.

Evaluating involves comparing actual performance with the budgeted performance and issuing directives or guidelines to correct the deviations, if any, observed between the actual and budgeted performance.

Management control is regular, not occasional and tends to be a rhythmic activity. It follows a definite pattern and time table, month after month and year after year.

Activity 3

a) Define 'responsibility centre'.

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b) Name four phases of formal management control process.

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c) Define and give one example of each of the following :

i) Standard Cost Centre

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ii) Discretionary Cost Centre

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iii) Revenue Centre

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iv) Profit Centre

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v) Investment Centre

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1.8 DESIGNING MANAGEMENT CONTROL SYSTEM : GENERAL CONSIDERATIONS

An effective management control is needed by every organisation. But how to create it? Or, what are the prerequisites of an effective management control system? These are questions of considerable interest and significance and have been the subject of

ceaseless debates. It is not that we intend to provide you cut and dried answers to these either. Here, we attempt to highlight some broad considerations which should be borne in mind while designing and implementing a management control system in any organisation.

Top Management Responsibility : The responsibility for the design and implementation of a management control system rests inescapably with the top management or say the coordinating unit. The reason is simple. It is the top management that decides the goals, objectives, strategy and structure of an organisation which indeed serve as the boundary constraints for management control system. Financial controller often provides critical assistance in designing management control system in an organisation.

Organisation Specific : It must be remembered that management control system tends to be highly situational and organisation specific. The designer of management control system must therefore clearly understand the relevant external and internal environment of an organisation. He must fully understand the nature of business, whether it is manufacturing, service, profit-oriented, non-profit, private or social project, and its size, scale, technology and diversity of operations, etc. Indeed, each organisation would have its peculiar environments and management control systems must seek specific fit to these.

Goal Congruence : Efficient and effective accomplishment of the goals of the organisation is the aim of all management processes. Management control system is no exception. Each responsibility centre in the organisation must then strive to put up best performance but not at the cost of overall performance. The overriding consideration in designing and implementing a management control system should be individual good consistent with sum total good.

Management Motivation : A prerequisite for goal congruence in an organisation lies in the acceptance of the goals and subgoals of the organisation by its unit managers and adequate effort and motivation on their part to achieve them. Thus, motivation of managers deserve special consideration in designing and implementing a management control system.

Fairness or Objectivity : It is sometimes said that managerial effort and motivation, among other things, depend largely on the degree of fairness, or objectivity built into the performance measurement and evaluation. Experience shows that people resent evaluation which they consider unfair or subjective or vague rather than evaluation per se. Thus, reasonably objective measures of performance should merit special attention of the management control system designers.

1.9 MANAGEMENT CONTROL SYSTEM AND RESPONSIBILITY ACCOUNTING

Responsibility accounting is a system of accounting that recognises various responsibility centres throughout the organisation and reflects the plans and actions of each of these centres by assigning particular revenues and costs to them. Responsibility accounting thus forms a vital component of management control system in any organisation. We had observed under 1.7 above that management control system comprises programming, budgeting, accounting and evaluating the performance of individual managers in an organisation in order to ensure the achievement of organisational objectives efficiently and effectively. The responsibility accounting, on the other hand, has a limited purpose of accounting for the particular revenues and costs assigned to the pertinent responsibility centres. Management control system is guided by **'controllability principle'**, i.e. the responsibility of a unit head is commensurate with the degree of control or influence or decision making power he or she wields, while the responsibility accounting is guided by information principle i.e. locating the individual in the organisation who is in the **best position to**

explain why a specific outcome occurred. Thus, in many circumstances, the degree of the manager's control or influence over the outcome may be minimal, but responsibility accounting may still be applied. To take an example, the price of a commodity may be beyond the influence of the purchasing manager within an organisation, yet he, being in the best position to explain the price, may be treated as a responsibility centre to generate pertinent information as part of responsibility accounting. Under management control system a person having influence on the quantity consumed in his organisation would be treated as a responsibility centre with a budget based on standard quantity and standard price. We thus see that while management control system is 'influence' oriented, the responsibility accounting is 'information' oriented. But 'information' being so vital to management control, in practice, management control system and responsibility accounting tend to get interchangeably used.

1.10 INFORMAL MANAGEMENT CONTROL

Besides the formal management control system which has been the focus of our discussion so far, much of the management control involves informal communication and interactions. Informal management control occurs through meetings, conversation, site visits, etc. Structure meetings with unstructured agenda which means that the time and venue of the meeting is fixed, say every Monday at 11.00 a.m in the chief's office, but not the agenda—the matters to be considered and decided, has been a common mode of control in professional groups, research teams, university schools and banks. Staff retreat and informal dinner also serve in a limited way the purposes of management control. Indeed, the role of informal management control has been considered so critical that managements like to keep 'loyal employees' who are essentially 'informers', in key positions. In a Marwari organisation, the finance man is invariably from the family/caste/village. Informal control is not visible in the form of responsibility centres, programmes, budgets and report, yet it exerts strong pressure. Informal management control is not amenable to systematic description but it does operate in every organisation whether it have a formal management control system or not.

Activity 4

a) List five considerations which commonly influence the design and implementation of management control system in any organisation.

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b) Define the 'Controllability Principle'.

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3) Which of the following types of management control system is followed in your organisation?

i) Formal [ ]
ii) Informal [ ]
iii) Both, Formal and Informal [ ]

Activity 5

The following are the extracts from the speech delivered by Mr. Ram Parkash at the National Management Institute, Regional Manager (East) of the National Airline.

'The National Airline was formed in 1948 with its headquarters at Bombay. Over

the last four decades, its operations have expanded manifold. Today it operates on 39 different routes and employs a workforce of over 18000..."

"In order to provide prompt and high quality service, we have adopted a decentralised structure. Besides headquarters at Bombay, we have eight regional offices and ninety six district sales offices in the country and abroad..."

"In order to achieve high level motivation among managers, regional and district sales offices are treated as profit centres. And in order to ensure effective control we have, among others, the following.

i) Ten year Corporate plan
ii) Five year fleet Modernisation plan
iii) Memorandum of understanding (MOU) signed with the Ministry of Civil Aviation for 3 years
iv) Annual and Quarterly Budgets — Region-wise
v) Annual and Quarterly Budgets — District-wise
vi) Variance Reports — Annual and Quarterly
vii) Airport Duty Officer's monthly conference with the Executive Director
viii) Internal Audit
ix) External Audit
x) CAG's Audit
xi) Daily statement of seats sold (sent to the Regional Manager)
xii) Daily flight schedule
xiii) Daily catering schedule
xiv) Daily Aircraft checking schedule
xv) Passenger Feedback (unsolicited) ...."

Which of the control activities of the National Airline, as stated above, would you classify as :

a) Strategic Planning and Control activities :

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b) Management Planning and Control activities :

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c) Operational Planning and Control activities :

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d) Others :

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1.11 SUMMARY

This unit discussed the concept and nature of management control vis-a-vis other forms of organisational control viz. strategic planning and control, and operational control. It also points out that management control system and responsibility accounting though sometimes used interchangeably, do differ in terms of their focus. Further, besides highlighting the principal characteristics of formal management control system, this unit also explained the theoretical framework of management control system. It stated that, in general, management control system comprises a structure of financial responsibility centres viz. standard cost centre, discretionary cost

centre, revenue centre, profit centre, investment centre, and a process of programming, budgeting, accounting and evaluation of responsibility centres' performance. Broad considerations viz. goal congruence, managerial motivation, objective performance measure, among others, should be borne in mind by the designers of management control system in any organisation. The unit concludes with a description of the nature of the omnipresent informal management controls.

1.12 KEY WORDS

Director : The device that detects, observes and measures the activities or phenomenon being controlled.
Goal Congruence : Harmony between or matching of goals of the individual and the goals of the organisation, or goals of apart of an organisation and goals of the total organisation.
Effector : A device that modifies or effects changes in the performance.
Management Control : A process of control by which a management attempts to carry out its strategies by motivating people to perform their activities and making necessary corrections.
Operational Control : A type of control which ensures that specific operations or tasks are carried out efficiently. It requires certain techniques and methods for various tasks.
Responsibility : A system of accounting which recognises various responsibility centres within the organisation.
Accounting : Depending upon the goals, a responsibility centre may be a cost centre, a revenue centre, a profit centre or an investment centre.
Selector : A device that assesses or evaluates the performance of an activity in relation to a pre-determined standard and identifies deviations.
Strategic Planning : The process of developing strategies and policies for the organisation so that the organisation and its parts function as a unified whole.

1.13 SELF-ASSESSMENT QUESTIONS

1) "Management control is just one of the various types of organisational control". Comment.

2) Distinguish between formal and informal management control and pinpoint the characteristics of formal management control system.

3) "The ultimate purpose of management control is to achieve goal congruence". Comment.

4) "An objective measure of performance is the prerequisite for effective management control in any organisation". Comment.

5) What are the important considerations which influence the design and implementation of management control system in a public enterprise?

1.14 FURTHER READINGS

Anthony, R.N. and John Dearden, 1977. *Management Control Systems—Text and Cases*, Taraporevala : Bombay (Chap. 1).

Horngren, C.T., 1984. *Introduction to Management Accounting*, New Delhi (Chaps. 9, 10).

Subhash Sharma, 1988. *Management Control Systems—Text and Cases*, Tata McGraw : New Delhi (Chap. 1).

UNIT 2 RESPONSIBILITY CENTRES

Objectives

After you have studied this unit, you should be able to :

- understand and explain the concept of responsibility centres in the context of an organisation
- should be able to integrate the organisation structure and responsibility centres
- identify the major problem areas to be tackled for the successful introduction of responsibility centres
- understand the basic requirements for the design of a simple system for th evaluation of responsibility centres.

Structure

2.1 INTRODUCTION

An organisation is meant for achieving certain predefined objectives. In a small organisation all decisions required for achieving these objectives can be made by one person. However, when the organisation grows and becomes more complex, it may be impossible for one person to make all the decisions. Consequently, achievement of these objectives is a complex task to be carried out by different segments of the organisation manned by different people. That is to say decision making is delegated to managers by giving them authority over a segment of the organisation's operations. One of the important implications of this delegation of authority is that the managers to whom the authority is delegated are held responsible for the consequences of their decision making. It is achieved by assigning authority and responsibility to accomplish defined parts of a total task of different segmental heads of the organisation. In the context of larger organisations, the delegation concept has been found to be very useful. The concept of delegation of authority and responsibility usually presupposes a degree of accountability. This means assignment of specific authority and responsibility to different levels of the organisation and evaluation of persons in charge of each level on the basis of achievement. Any such level constitutes a centre of responsibility. This in turn requires the establishment of necessary reporting system to enable the management to assess the performance. A system of accounting and reporting by responsibility is necessitated. Thus, introduction of responsibility centres requires the establishment of a system of accumulation, absorption and allocation of costs to identifiable responsibility centres.

2.2 DELEGATION AND RESPONSIBILITY CENTRES

One of the first steps required in implementing the concept of responsibility centres is to have a clear understanding of the strategy to be followed by the company. It is not possible for all the organisations to follow a given formula in terms of restructuring their organisation for this purpose.

Authority for making decisions and the associated responsibility can be delegated in numerous ways. Responsibility centres in an organisation have to be coterminous with the patterns of delegation to be followed in the organisation. Most commonly used forms of delegation are based on major business functions, product lines or geographical regions of operation of the company.

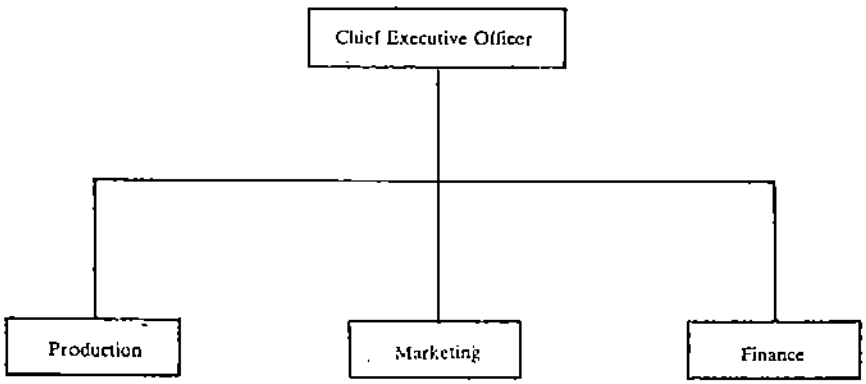
Patterns of Delegation

There are different ways in which authority and responsibility can be delegated in an organisation. This in most cases will be determined by the nature and complexity of the organisation, environmental factors, nature of business and above all the philosophy of the management. In practice, companies identify one of these as the key factor in their situation for the purpose of designing delegation. Thus, we have ... businesses where the delegation is based on the functional responsibi..., such as production, marketing and finance. In some other cases differ... product lines geographical location of the business may be considered the key factors.

Functional Delegation

In many organisations authority and responsibility is delegated on the functional basis of production, marketing and finance. One individual will be given the decision making authority and the responsibility for all the production activities, another for all the marketing activities and yet another for all finance activities. This pattern of delegation is illustrated in Exhibit 2.1

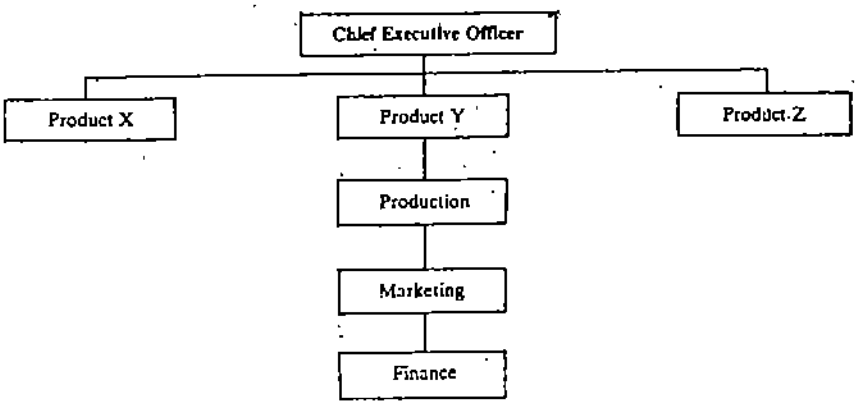
Exhibit 2.1 : Functional Organisation



Product Lines

Some organisations delegate authority based on product lines of the company. A single manager will be responsible for the different functions of production, marketing and finance for the particular product line. This type of delegation is followed normally by companies who choose to organise themselves into strategic business groups. These product line managers may in turn delegate their decision making authority and responsibility to various subordinate functional managers, namely, production manager, marketing manager and finance manager. Exhibit 2.2 illustrates delegation based on product lines.

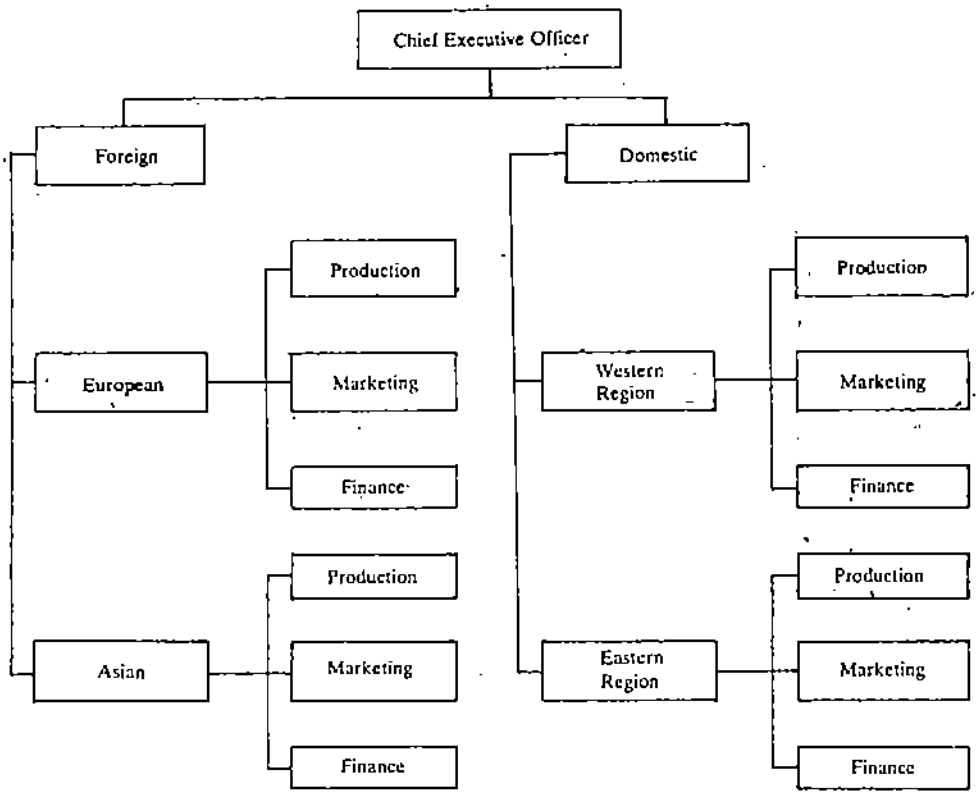
Exhibit 2.2 : Product Line Organisation



Geographical Regions

Geographical delegation of authority and responsibility is normally resorted to for the simple reason that customs and characteristics of the people; market and the business environment may vary considerably from area to area. This is even more so in the case of multinational companies operating worldwide. It is a common practice to segregate the organisations on the basis of domestic and foreign operations. In India, it is a common practice for companies operating throughout the country to divide their operations into four or more geographical regions of the country. Exhibit 2.3 illustrates patterns of delegation based on geographical division of the operations.

Exhibit 2.3 : Geographical Organisation



The pattern of delegation followed by different companies will be determined more by the philosophy and leadership style followed by the top management. Apart from management style and philosophy the complexity of operations of the organisation is another important factor. In most cases when organisations become multi-technology, the sheer need for specialised knowledge compels delegation.

Another major criterion for delegation is the economic consideration. When the cost or benefit arising out of wrong or right decisions is large then the decisions may probably not be delegated. Hence, you will find most decisions involving long term impact on the company and large financial implications are seldom delegated. However, most decisions involving day to day operations are delegated in most cases.

Activity 1

Please answer by completing the blanks

a) Some of the key factors considered by companies in delegating authority in the organisation are :

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b) Functional delegation involves delegation of authority based on .....

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Activity 2

Briefly answer the following questions :

a) Why do firms delegate?

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b) What factors usually determine delegation?

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c) Can you recall the common forms of delegation?

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d) How do the different forms of delegation differ?

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2.3 THE CONCEPT OF RESPONSIBILITY CENTRES

In today's competitive business environment large companies cannot survive without effective control and management of the operations. This challenge is met by recognising three key principles. First, **delegation** of responsibility for specific to successive lower levels of the organisation. Second, **motivation** of the level of management to which a certain task has been delegated. And third, **measurement** of the achievement of the specified objectives. This amply demonstrates that the responsibility accounting is not a stand-alone-system. Instead it is an integral part of the total management system. This brings forth the need for its direct linkage to the organisation structure, financial planning and measurement and reporting system.

The organisation structure followed in this framework is typically pyramidal. In this structure the lower levels of management report upwards to their superiors. This implies that the top management has delegated responsibility of achieving specific objectives to the lower levels.

The objective of effective management control will not be ensured merely by introducing a system of accumulating and reporting information by segments of the organisation. What is essential is proper division of authority and responsibility so as to avoid gaps and overlapping. The concept of responsibility centres is, therefore, a logical extension of the idea of delegation of responsibility and authority for effective management control. To decide on the kind of responsibility centre needed, it is necessary to determine the nature and level of delegated authority and the expected achievement from the centre.

The key consideration in determining the responsibility centre is its ability to control cost or revenue. Thus, determining the question of controllability or otherwise of a particular cost or revenue by a responsibility centre becomes the key consideration in the system design. Even responsibility centre is normally evaluated on the basis of predefined criteria of financial performance.

Activity 3

Please complete the blanks :

a) The challenge of competition and the need for effective control and management is met by firms by recognising three key principles. They are :

i) .....

ii) .....

iii) .....

b) The key consideration in determining the responsibility centre is to control

..... or ..... .

2.4 ORGANISATION STRUCTURE AND RESPONSIBILITY CENTRES

Introduction of responsibility centres presupposes appropriate modifications in the existing organisation so as to make it more responsive to the needs. In order to make a responsibility centre meet the needs of a decentralised organisation the following changes should be effected :

1 The responsibility for all the revenues and expenses must be assigned to identified individuals in the organisation.

2 The accounting system should be modified so as to accumulate and report revenues and expenses on the lines of assigned responsibilities within the organisation.

3 A system of evaluation based on comparison of revenues and expenses of different responsibility centres with preassigned targets should be established.

The contemplated change in the organisation should not to be considered as a isolated step but as an integrated change. Each of the steps will have a bearing on the other and involves different people in the organisation. It must also be noted that the responsibility structure should be on the lines of the organisation structure. In the absence of such integration any responsibility accounting system which may seem sound in principle may not be effective in practice. This can be achieved by clear definition of responsibility at different levels of the organisation irrespective of the position descriptions. Such a redefinition of the organisation is an essential precondition for the successful implementation of the responsibility centre system.

Another major problem faced in the implementation of responsibility centres lies in the identification of the persons responsible for controlling different expenses. Many expenses are controllable by different segments of the organisation. Expenses are also controlled by different higher levels in the organisation. It is, therefore, necessary to fix the controllability of expenses based on the degree of control to be exercised by the different levels. It is also necessary at times to reallocate expenses from one unit to the other. These practices may be dictated by practical expediency and it will be necessary to segregate responsibility reports into controllable and non-controllable elements.

As we have observed earlier, effective implementation of a system of responsibility centres requires division of the entire organisation into responsibility centres. Each of these centres is in charge of identified individuals and their responsibility is precisely stated.

Activity 4

1) What are the essential changes to be effected for a responsibility centre system to meet the needs of a decentralised organisation?

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b) Can you describe the relationship between organisation structure and responsibility centre?

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2.5 TYPES OF RESPONSIBILITY CENTRES

As we discussed earlier, a responsibility centre enables us only to measure a manager's financial performance. We should not lose sight of the fact that financial performance is only one of the measures of performance of the manager. His performance also depends on a host of other measures such as quality of output, morale of the labour force and his ability to motivate the team towards achieving corporate objectives.

Any business organisation is concerned with four major elements i.e. expenses, revenue, profit (revenue-expenses) and investment. Even though these elements are interrelated and have mutually interactive relationship, they are in practice controlled individually. Thus, conceptually there are four subsets of a responsibility centre If the manager in charge of a responsibility centre has control over expenses, his sphere of control can be termed an expense centre. If a manager has control over revenue, that area of responsibility can be termed a revenue centre. If a manager is responsible for profits, by controlling both revenue and expenses, that responsibility area may be referred to as a profit centre. Similarly if a manager controls investments, that area of control can be called an investment centre. It is possible and logical that these different responsibility centres are built up in a hierarchical structure.

Relationship between different Responsibility Centres

When the whole company is treated as a profit centre it may have one or more expense responsibility centres. If a company has more than one profit centre, each profit centre will have one or more expense responsibility centres. It may also have a corporate expense responsibility centre to which all expenses, which are not incurred specifically for a profit centre, may be charged. For example, general administration expenses of corporate office may be charged to appropriate corporate expense responsibility centre.

Characteristics of a Responsibility Centre

An effective responsibility centre should have the following characteristics :

1 It is a clearly defined segment of an organisation.

2 A designated individual is responsible for its performance, namely, the output produced by the segment as well as inputs consumed by the segment.

3 The designated individual has the necessary authority to discharge the assigned responsibilities.

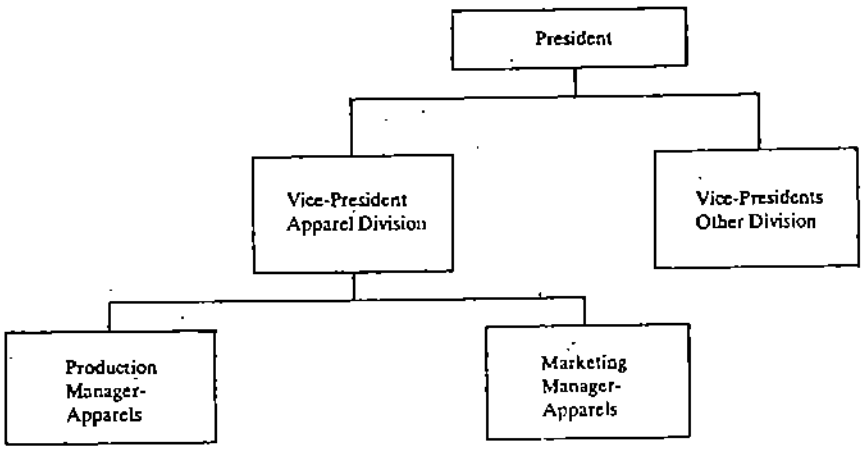
The usual forms of responsibility centres in different organisations vary widely. It can be the entire company, business units, product divisions, sales branches, sales regions, functional departments such as production, marketing, personnel and finance or their subdivisions.

Illustration

Ibis Apparels is organised with clear delegation of responsibilities. The production manager is responsible for all the activities relating to production. Similarly, the marketing manager is responsible for all activities relating to the marketing of products. Vice-President, Apparel Division is responsible for the profits of the division. However, only the President is responsible for the investment decisions for the different divisions of the company.

The management control structure of Ibis Apparels is presented in Exhibit 2.4.

Exhibit 2.4 : Management Control Structure of Ibis Apparels



As presented in Exhibit 2.4 the management control structure of Ibis Apparels is structured into responsibility centres as follows :

Designation	Responsibility Centre
President	Investment Centre : Responsible for all investment decisions and hence to be evaluated on the basis of performance of Return on Investment (ROI)
Vice-President Apparels Division	Profit Centre : Responsible for all the revenues and expenses of the division and hence responsible for the profits of the division; to be evaluated on the basis of profit performance either in terms of achievement of budgeted performance or in terms of margin on sales.
Production Manager (Apparels)	Expense Centre : Responsible for production and hence responsible for all the expenses to be incurred for production; to be evaluated on the basis of achievement of budgeted targets of production and control of expenses within budgets and or a certain input-output relationship.
Marketing Manager (Apparels)	Revenue Centre : Responsible for all the revenues of the division; to be evaluated on the basis of achievement of the budgeted targets.

Activity 5

a) Try to draw the organisation chart of Ibis Apparels based on the above information relating to responsibility centres.

b) Can you identify the four major elements to be controlled in any organisation?

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c) Can you describe different responsibility centres in terms of the major elements to be controlled in any organisation?

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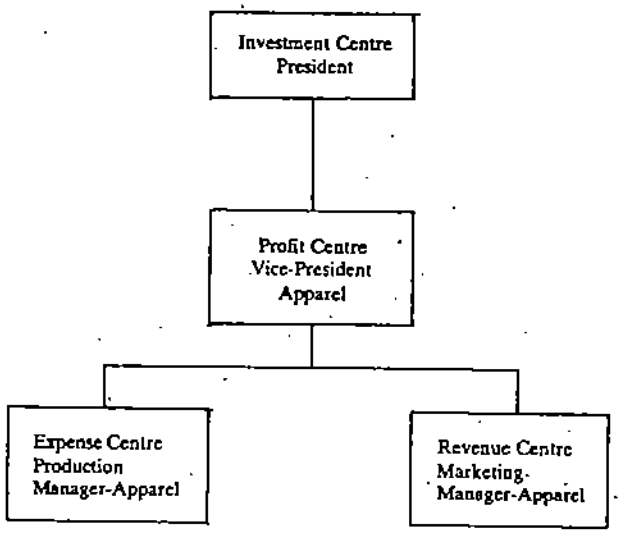
It should be noted that a responsibility centre does not stand in isolation in the organisation. For example, in the above illustration the performance of the investment centre, that is, the President, is intimately related to the performance of the subordinate responsibility centre, namely, the profit centre (Vice-President : Apparel Division). Similarly the performance of the profit centre in turn is dependent on the two subordinate responsibility centres, namely, the expense centre (Production Manager : Apparel) and revenue centre (Marketing Manager : Apparel).

It should also be noted that the responsibility of the expense centre and profit centre may be further delegated to subordinate responsibility centres. From the above we can visualise the hierarchy of responsibility centre in case of Ibis Apparels as presented in Exhibit 2.5

Exhibit 2.5 : Ibis Apparels—Hierarchy of Responsibility Centres



2.6 ESTABLISHING RESPONSIBILITY CENTRES

Establishing responsibility centres in an organisation is not an easy task. It must be carefully planned and executed. Some of the major steps involved in the process can be described as follows :

1 Study the organisation structure, authority-responsibility relationships or job descriptions, layout of the factory and office, various activities, production process and structure of the production flows, and the interrelationships among these different activities. Based on this study, list all the different operations and activities, functions and tasks in the company.

2 Define each activity in descriptive terms.

3 Evaluate the need for any reorganisation required in the context of establishment of responsibility centres and develop an organisation structure on the lines of desired responsibility centres.

4 Delineate the organisation into various responsibility centres. Ensure that the centres so established satisfy the three characteristics of a good responsibility centre.

The established centres can be considered a tentative starting point for evaluation against the following factors :

- The objectives of the system which will govern the number and type of responsibility centres, the need for cost information relating to a particular activity ;

- **The need for flexibility** for supplying cost information for occasional requirements;
- **Ease in allocation** of costs, measurement of performance and evaluation of variances;
- **Future needs** of the organisation at least to the extent known from corporate or strategic plans;
- **The volume of information** and paperwork to be contended with;
- **Segregation** of production departments and service departments;
- **Comparison** of the planned responsibility centres with those of a similar company; and
- **A system of coding** of the responsibility centres for easy recording and retrieval of information. This can also be integrated with account numbers.

Activity 6

Draw up a flow chart of activities for establishing responsibility centres in an organisation with which you are familiar.

2.7 PERFORMANCE EVALUATION OF RESPONSIBILITY CENTRES

The basic premise of the organisation of responsibility centres, as we have seen, is to assign authority and responsibility to individuals at different lower levels. The problem for the group is to determine what part of the group's operation is to be left to the individual to decide and what success criteria should be employed for the individual's contribution to the group.

The observable set of such criteria include such factors as profit levels, profit rates, expense, market shares and so on. Controllable variables for the managers include such items as quantities of materials and labour purchased, prices and quantities of output produced, marketing expenditures, research and development expenditures and so on. The outcome does not depend entirely on these factors. It also depends on the environmental factors, some of which will remain uncertain. Another important factor is the corporate policy. The corporation and the subsidiary managers try to maximise their respective welfare with due consideration to each other interests.

Many corporate policy questions arise in the context of performance evaluation. In the first place, the company must decide upon the level of autonomy to be granted to the lower levels of management. Second, the company must decide on the set of yardsticks relevant for performance evaluation and what should be their relative weightage with respect to oneanother. Third, the company must decide upon the policies that affect variables concerned with performance evaluation. For example, policy with respect to capital structure. Finally, the company must have a clear understanding of how environmental variables affect the performance measures of lower level managers.

On the basis of the above discussion we can summarise the overall concept of performance evaluation of various responsibility centres. Each responsibility centre has a certain freedom, that is, a set of control variables. It also has other variables that are specified by top management, to be considered as given. Finally, it is evaluated according, to some specific objective. It should also be borne in mind that there is unlikely to be a completely pure expense centre or a pure profit centre. Further, there is always some degree of top management intervention with the control variables. For example, even an investment centre may have to obtain at least a notional clearance before investments are undertaken.

The overall performance evaluation concept applied to various responsibility centres is presented in Table 2.1.

Table 2.1 : Various Centres and Their Performance Evaluation

Type of Centres	Control variables of the Centre	Variable predetermined by top management	Objective
Expense Centre	Prices and quantities of inputs	Prices and quantities of output/budget	Minimise cost
Revenue Centre	Prices and quantities of inputs	Quantities to be sold/budget	Maximise sales revenue
Profit Centre	Prices and quantities of inputs and outputs	Investment	Maximise profit
Investment Centre	Prices and quantities of inputs and outputs and investment	None	Maximise return on investment

Activity 7

Can you enumerate from major considerations in the performance evaluation of responsibility centres?

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2.8 THE CONCEPT OF RESPONSIBILITY ACCOUNTING

You have seen that the need for delegation of decision making authority and responsibility is a result of organisational complexity. This, simultaneously poses the problem of a efficient information system efficient for reporting on the activities of various managers and their evaluation. You have studied earlier that accounting is an

information processing system which provides necessary information for effective control in a business organisation. In this general framework, responsibility accounting is the structuring of the information processing system through which managers at higher levels maintain control over segments of the business for which managers at lower levels are responsible. This structuring is achieved by an accounting systems designed to control expenses by directly identifying and reporting the expenses in terms of people who are responsible for the same.

We have already noted that to achieve the objective of better control the organisation is identified into segments based on responsibility and different degrees of control. These segments, for example, can be designated as **expense centres**, if responsibility is for expense control alone, or as **profit centres**, if the responsibility and control encompass all activities in the production and sale of products, systems or services. Under the framework of responsibility accounting an expense centre therefore becomes an accounting centre for the accumulation, allocation or absorption of expenses. Such accumulations enable us to generate necessary information required for the top management to effect control over the activities of the responsibility centre. Responsibility accounting is thus the information processing system used in consonance with responsibility centres.

The challenge thrown by the responsibility accounting system to the financial executive is in terms of the need for implementing and effective communication system that will function as a part of the total financial reporting system. Certain key principles are applied so as to ensure an effective responsibility accounting system. However, even with the key principles you will find that responsibility accounting is a more general concept the particular systems that are designed are unique to the organisations depending on the complexity and diversity of the organisations. However, one of the basic tenets of responsibility accounting is that it emphasises the importance of information to operating management unlike the traditional accounting objectives.

The concept of responsibility accounting has applicability in most organisations. However, its usefulness is more pronounced in case of more complex multi-product business organisations where the authority is delegated to segments and the need for monitoring performance on a regular and continuing basis is greater.

Activity 8

What is responsibility accounting? How does it differ from responsibility centres?

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2.9 SUMMARY

Increasing complexity of business competition demands more effective management control systems. One of the major steps in this direction the delegation of authority and the assignment of responsibility for the achievement of specified results. Responsibility centres form an important tool in this effort. The very objective of responsibility centre is that a certain individual in an organisation is held responsible for the operations under his control in terms of inputs and outputs. The responsibility centres are evaluated for their performance. Responsibility accounting provides the necessary support for such a system by accumulating and reporting relevant information relating to activities of different responsibility centres.

2.10 KEY WORDS

Delegation : Process of assigning the authority for taking decisions and the associated responsibility to a designated individual in an organisation.

Expense Centre : A segment of the organisation where the managers' sphere of control is over expenses.

Investment Centre : A segment of the organisation where the manager is responsible for exercising control over the investments made and hence responsible for the return in relation to the investments.

Profit Centre : A segment of the organisation where the manager is responsible for both revenue and expenses and hence expected to exercise control over profits to be earned by that segment.

Responsibility Centre : A segment of the organisation in charge of a designated individual responsible for the achievement of specific objectives set for that segment.

Responsibility Accounting : Responsibility accounting is the structuring of the information processing system through which information is identified and reported for different responsibility centres.

Revenue Centre : A segment of the organisation where the manager is responsible for the revenues earned by that segment.

2.11 SELF-ASSESSMENT QUESTIONS

1 Why do organisations delegate authority and responsibility?

2 What are the commonly used basis of delegation in organisations? How do they differ?

3 Explain responsibility accounting. What are the essential requirements of effective responsibility accounting?

4 Choose the right answer from the given alternatives for the following questions.

5 An investment centre will have :

a) Authority to make decisions affecting major determinants of profits including choice of markets, prices, sources of supply and nature of customers.

b) Authority to make decisions over all costs of operations including choice of suppliers.

c) Authority to make decisions affecting the major factors determining profits such as choice of markets, sources of supply and significant control over investment in assets used by the segment.

d) Responsibility for developing markets and vendors for the organisation.

6 A profit centre will have authority and responsibility to make decision relating to :

a) Major factors affecting profits including choice of suppliers and markets for sale of products.

b) All investments in the division, choice of suppliers and markets and setting prices.

c) All aspects of costs of operations of the organisation.

d) All the elements of input going into the final output.

7 An expense centre has :

a) Responsibility for putting together material and labour to produce the final output.

b) Responsibility over all expenses incurred in the organisation.

c) Responsibility for developing markets for selling ouput.

d) Authority to make decisions over significant aspects of costs including the power to choose sources of supply.

8 Suburban Nursing Home is situated on the outskirts of Calcutta. The nursing home caters to the middle class population in the suburbs. It is found that the number of patients at the nursing home increases during the monsoon months of June to August.

An MBA from one of the leading Institutes in the country was hired to improve the management of the nursing home which was all along managed by its medical staff. The new general manager introduced a system of management control for the nursing home including responsibility accounting. The changes envisaged provision of quarterly cost reports to department heads. Earlier, there was no system of regular cost reporting to the department heads.

The General Manager wrote to all the departmental heads about the introduction of management control system. Highlights of the communication from the GM were as follows :

> We have introduced responsibility accounting system for the nursing home. All the departmental heads will be provided with quarterly reports showing the budgeted and actual expenses for the period. The report will show the variations from the budget. The essence of the control system is that you are responsible for the expenses in your department and for controlling the same within the budget. The variations are highlighted to enable you to identify which items of expenses are out of control and the size of variation will indicate the ones which are crucial. You can concentrate your effort towards control on such variations or exceptions. We call this *management by exception*. We are providing below the last quarter reports :

Suburban Nursing Home
Performance Report—Catering Department
June-August 19X1

	Budget	Actual	Variance	% Variance
	Rs	Rs	Rs	
Patient days costs	12,000	15,000	(3,000)	(25%)
Catering labour	7,500	10,000	(2,500)	(33.33%)
Supplies and provisions	60,000	70,000	(10,000)	(16.67%)
Water	1,000	1,200	(200)	(20%)
Fuel	3,500	4,200	(700)	(20%)
Maintenance & other services	2,000	2,700	(700)	(35%)
Catering Manager's Salary	9,000	9,300	(300)	(3.33%)
Depreciation	10,000	12,000	(2000)	(20%)
Allocated Administrative cost	3,000	3,750	(750)	(25%)
	96,000	1,13,150	(17,150)	(17.86%)

The General Manager wrote to all the department heads about the introduction of from the budget. The essence of the control system is that you are responsible.

The above report shows that most expenses are substantially above their budgeted levels and departmental heads should pay particular attention to cases where the volume of such expenses is large.

The annual budget for the year 19X1 prepared by the GM in consultation with the departmental heads was approved at the budget meeting. Quarterly budgets were prepared based on one-fourth of the annual budget. It was also observed that the price increases which were considered at the time of preparation of the budget were under-estimated by about 3%.

Required

1 Comment on the budget of the responsibility centre manager.

2 Comment on the variances and explain what part of it, if any, can be assigned to the responsibility centre.

2.12 FURTHER READINGS

Anthony, Robert N., John. Dearden, and Richard F., Vancil, 1965. *Management Control Systems—Cases and Readings*, Richard D. Irwin ; Homewood.

Fremgen, J.M. 1975. *Accounting for Managerial Analysis*, Richard D. Irwin; Homewood, 1976.

Raymond L. Larson, 'Decentralization in Real Life', *Management Accounting*, 55, March 1974.

Solomons, David; 1965. *Divisional Performance : Measurement and Control;* Richard D. Irwin; Homewood, 1965.

Solution Question No. 8

1) The idea of controllability of expenses is of significant importance to the design of a responsibility accounting system. The quarter's budget fails to appreciate the fact that the catering manager has no control over the number of patients to be catered to. It should also be noted that some items of expenses, included in the responsibility report, are beyond the control of the catering manager. Items such as manager's salary; allocated administrative expenses, depreciation are outside the control of the catering manger.

   Regarding the increase in cost, they have to be seen in the light of the seasonality of patient arrival. This can be taken care of by opting for a flexible budget. The GM had made a mistake by dividing the fixed budget into quarters without considering the volume changes during the quarters.

2) The variances should be identified in terms of expenses needing the manager's attention. In doing so, proper adjustments should be made for the change in volume of activity. The variances should be analysed to find out the causes of variances such as volume change, change in prices, excess use of resources, unexpected increase in work demanding overtime payments and so on.

   The total variation from the budget, after taking the above factor into consideration and the pattern of variation over time, provide some of the necessary aspects for judging the efficiency and effectiveness of the manager.

Notes

Notes

UTTAR PRADESH
RAJARSHI TANDON OPEN UNIVERSITY

MBA-2.6

Management Control Systems

Block

2

MANAGEMENT CONTROL STRUCTURE

BLOCK 2 MANAGEMENT CONTROL STRUCTURE

Block 1 gave you an understanding of the basic concepts involved in management control systems. What is management control, what is meant by management control systems, and what, in general, is the nature of different types of responsibility centres were discussed. You must have noted that "Responsibility Centre" was a key concept in management control. Block 2 broadly deals with the structure of management control, and, in a way, is an extension of the key concept of responsibility centre introduced in block 1. This block has four units.

Unit 3 explains what is an Expense Centre and when can an expense centre become a responsibility centre. The "controllability" of expenses in the context of expense centres is examined and the need for 'responsibility reporting' is explained.

Unit 4 deals with Profit Centres. The role of profit centres in an organisation is discussed. What considerations should guide an organisation in establishing profit centre are explained. The alternatives for measuring performance of profit centres are discussed. The usefulness of the idea of the profit centres as a motivational tool and the question of performance related compensation are examined.

Unit 5 deals with Transfer Pricing. The subject of transfer pricing and its interface with corporate policy is first explained. Various methods of pricing goods and services from one division to another within a company are discussed. The basic principles which a set of criteria evolved for performance evaluation should satisfy are examined in the background of the problems likely to arise from decentralisation. Finally, transfer pricing practices are briefly discussed.

Unit 6 deals with Investment Centres. Some issues concerned with the identification of "investment base" and the measurement of the latter are discussed. The criteria that could be used for measuring investment centre performance are explained. Lastly, some basic problems associated with investment centres as a financial control device are discussed

UNIT 3 EXPENSE CENTRES

Objectives

After you have completed this unit, you should be able to :

- identify expense centres in a given organisation
- distinguish between expense centre and an expense responsibility centre
- distinguish between controllable and uncontrollable expenses in the context of an expense centre
- appreciate the need for a different measure of financial performance of the expense centre
- simple structure for evaluating the performance of expense responsibility centres.

Structure

3.1 INTRODUCTION

We have studied in the previous unit about reponsibility centres. Please recall that a responsibility centre is an individual to whom a certain authority and responsibility is assigned and that the individual is responsible for the achievement of given objectives. Where the responsibility assigned to a given segment of the organisation is for incurring expenses for achieving a certain output, we refer to it as the expense centre. The management control in this case is designed around minimising the expenses with respect to given outputs.

The very premise of a responsibility centre is that the manager of the centre is responsible for the activities over which he has control. Thus, an expense centre manager will be responsible for all the expenses over which he has control. The financial performance evaluation will also be based on the same premise. The evaluation of responsibility centre will be based on the minimisation of expenses with respect to given outputs. In an expense centre inputs are measured in monetary terms, but outputs are measured in physical quantities.

3.2 THE CONCEPT OF EXPENSE CENTRE

An expense centre is the lowest level of responsibility centre in an organisation. Its manager is basically responsible for production of a product or service; his decision authority relates to how human resources, machinery and materials should be used to produce the product or service. The expense centre manager has no control over revenues, profits, or investment. He has no control over marketing decisions or investment decisions such as what additional machinery is to be bought, or what level of inventory is to be carried.

The total performance of an expense centre manager depends on how effectively and efficiently an expense centre is operated. Obviously, effectiveness of an expense centre manager will depend on a host of non-financial parameters such as maintaining quality levels of output, compliance with production schedules and targets, maintaining morale of the workers and so on. Normally, separate reporting systems are used to report effectiveness. Efficiency is normally judged in terms of financial

performance. This is usually measured and reported by the responsibility accounting system. Usual practice of evaluation of the financial performance of an expense centre manager is by comparing the actual expenses of the centre against the budgeted expenses. In usual practice the evaluation is carried out on the basis of exception reporting. Exception reporting is a process wherein the actual expenses of an operating period are compared against the planned expenses of that period and the deviations from the plan of actuals are reported. The management attention is directed to the *deviations or exceptions.*

Activity 1

1 Can you define an expense centre?
2 What is meant by "management by exception"?
3 What could be the basis for evaluating the financial performance of an expense centre?

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3.3 DISTINCTION BETWEEN RESPONSIBILITY CENTRE AND EXPENSE CENTRE

You have studied in the previous unit that the concept of **expense centre** is used in two senses. First, it is an accounting entity for the accumulation, allocation and absorption of expenses incurred. In this sense an expense centre is a segment of the organisation for the accumulation and reporting of the expenses relating to the operation of that segment. In the second sense, it is an expense responsibility centre. In this sense it is responsible for the function of management control.

The forms and purposes of an accounting centre and a responsibility centre are different. However, the accounting centre may support the information needs of the responsibility centre.

Characteristics of Responsibility Centre and Expense Centre

Please recall the ideas we learnt in the context of the responsibility centre. We saw that a good responsibility centre is a segment of an organisation which is under the charge of an individual with the necessary authority.

We shall now examine the characteristics of an expense centre in the context of a responsibility centre. The important characteristics of an expense centre are the following:

1 The activities or operations of every expense centre should be homogeneous so as to ensure uniform basis of charging expenses within the centre. This homogeneity is necessary for allocation of the expenses on a common basis in the expense centre. Unlike a responsibility centre the expense centre need not be an organisation segment. Further, an individual may or may not be responsible for its input and output. They are not responsibility centres since they are not organisational segments. But they are separate accounting entities for accumulating expenses.

2 The activities or operations of each expense centre must be well defined and clearly identifiable. There should be no overlap or ambiguity with respect to the activities of the centres. This characteristic is essential for the proper accumulation of expenses.

The above characteristics account for the differences between responsibility centres and expense centres. However, in this unit we are concerned with expense centres which are also responsibility centres or in other words expense responsibility centres.

The above clarification is made so that you do not get confused when the same expressions are used in different contexts in the literature. Therefore, an expense responsibility centre will have all the characteristics of a responsibility centre and will be under the responsibility of a designated individual. It is possible to have subsidiary units under an expense responsibility centre for the purpose of accumulation of expenses.

Forms of Responsibility Centre and Expense Centre

In usual practice a responsibility center takes the form of an entire company, business units, product divisions, sales branches, sales territories, functional departments such as production, marketing, and finance, and their sub-divisions.

In contrast an expense centre may take any of the following forms :

- An activity or a group of activities such as invoicing, collection or the like.
- A piece of machine or a group of machines.
- A product or a group of products.
- A geographical location or a group of locations.
- A branch or division or a group of such branches or divisions.
- A group of persons, for example, a group performing a certain task.
- An object of expense such as employee welfare, insurance expenses and so on.
- A programme or activity such as coding of accounts or computerisation of information system.

Despite the differences between expense centres and responsibility centres, they do not stand in isolation. They are related. An expense responsibility centre itself may be an expense centre or a group of expense centres. A manufacturing department may be a responsibility centre and a single expense centre. It is also possible that the manufacturing expenses may be assigned to different expense centres namely machining, finishing, assembly and packing. Separate expense centres are created to facilitate the measurement and evaluation of expense behaviour and to facilitate the analysis of the expense behaviour.

When the expense responsibility centre consists of several expense centres, the expense centres are used for accumulating and allocating the expenses incurred in a particular responsibility centre. However, for reporting, the expenses incurred by all expense centres within the responsibility centre will be consolidated.

Activity 2

1 Can you distinguish between an expense centre as an accounting entity and an expense centre as a responsibility centre?

2 What characteristics do you look for in an expense responsibility centre?

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3.4 CONTROLLABILITY OF EXPENSES

Introduction and implementation of expense centre to a great extent is influenced by the idea of controllability of expenses. It is true that all expenses in an organisation are controllable by someone or other. However, any individual manager may not be in a position to control all the expenses. The principle is that if a manager cannot control an item of expense it should not be a part of the expense centre's responsibility report. An expense could be considered controllable if the centre manager can make decisions which could considerably or significantly influence that expense. For example, advertising expenses could be considered controllable by the marketing manager if the authority to decide on the nature and strategy for

advertising, the media to be used and the quantity of advertising to be used for marketing the products of the company is all vested in that manager. Depreciation expenses on the personal computers used in the marketing manager's office is not considered controllable by that manager unless the authority to decide on buying and selling of the same is also vested in that responsibility centre. When we say that an expense is controllable it should not be understood in an absolute sense. For example, when we say that delivery expenses are controllable it should be borne in mind that the manager has to pay the prevailing cost of the fuel for the trucks or wages for the drivers. Or when we say that the advertising expenses are controllable, the manager has to buy the newspaper advertising at the prevailing cost. We have explained this point only to highlight the fact that the control is never absolute. The ability to effect significant changes is a sure sign/parameter of controllability.

One more example will make the idea clear. In a production department the production manager or works manager can effect control over direct material costs by reducing wastes and improving efficiency of production process and thereby using the least possible quantity of the material. It should be noted that the direct material costs can also be controlled by more efficient purchase with the most advantageous prices. This is the reason why in an efficient responsibility accounting system we advocate reporting of the effect of use of material into quantity variance to the production manager and the effect of price difference to the purchase manager.

Controllability has to be determined with respect to two important factors. First, whether a particular item of expense is controllable within the authority delegated to the responsibility centre manager and second, within what time period the expense is controllable. Please note that most responsibility reporting is done once every week or month.

The first factor which determines whether the cost is controllable by a particular responsibility centre is by the extent of authority delegated to that manager. We have seen this aspect in detail in the previous unit. This does not imply that delegation means water-tight segregation of responsibilities. Please recall the example we discussed with respect to the production manager being responsible for the material usage and the purchase manager being responsible for the price of materials. It is very easy to visualise that the quality of materials purchased can influence the quantity of materials used. Similarly the price of materials can be influenced by the timing of purchase. In a situation when a rush job is to be executed and materials are to be procured in a hurry, it is likely that the price may be high and the quality poor.

It is usually said that all the expenses are controllable if long enough time is allowed. As the time period becomes shorter, controllability of costs becomes less. For example, when we are planning to build a plant the cost of the plant is controllable in terms of the size of the plant, choice of equipment and so on. Having built the plant the cost of the plant is uncontrollable. In other words, we can say that most of the committed costs are uncontrollable in the short run.

Activity 3

1 Can you describe controllability of expenses in the context of expense centres?

2 Can you try to visualise and enumerate costs which are controllable by different levels in an organisation in the very short run, say quarter?

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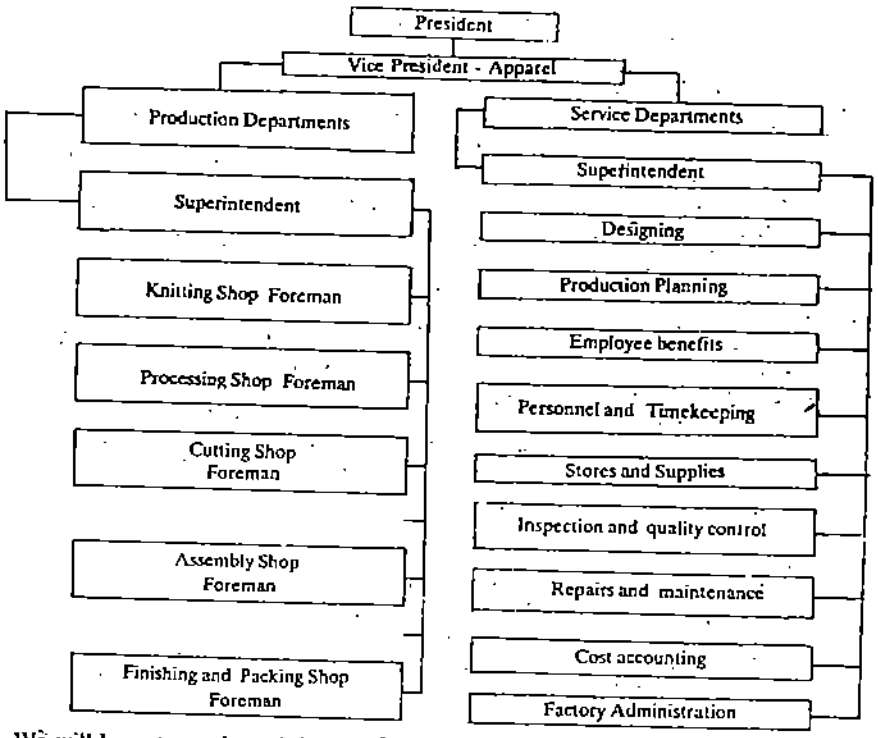
Illustration : Expense Responsibility Centre

To illustrate how an expense responsibility centre operates and how information flows through the system, we will use the Ibis Apparel Company. First we must understand the organisation. Exhibit 3.1 presents the production and allied functions

of the organisation along with its linkage to the top management. We will try to illustrate the introduction of expense centres for Ibis Apparel step by step. For simplicity we restrict ourselves to the manufacturing department.

Exhibit 3.1
Organisation Chart of Ibis Apparel Manufacturing Division



1 We will have to study and document the organisation structure of the manufacturing department: Plant layout, activities, production process and their sequence. The organisation structure of the manufacturing department is given in Exhibit 3.1. This shows all the manufacturing and supporting functions and gives an idea about each major activity. In more complex organisations it may be necessary to briefly describe each activity.

2 We visualise no changes in the organisation chart as necessary either for the present or foreseeable future needs.

3 It is possible to identify the responsibility centres and the different managers in charge of the same as given in Table 3.1.

TABLE 3.1
Responsibility Centres of Ibis Apparel

	Responsibility Centre	Manager in Charge
1.	Apparel Division	Vice President - Apparel
2.	Office of the Vice President	Vice President - Apparel
3.	Production Plant	Production Superintendent
4.	All Production Departments	Production Superintendent
5.	Office of the Production Superintendent	Production Superintendent
6.	Knitting Shop	Foreman - Knitting
7.	Processing Shop	Foreman - Processing
8.	Cutting Shop	Foreman - Cutting
9.	Assembly Shop	Foreman - Assembly
10.	Finishing and Packing Shop	Foreman - Finishing & Packing Shop
11.	All Service Departments	Service Superintendent
12.	Office of the Service Superintendent	Service Superintendent
13.	Designing	Chief Designer
14.	Production Planning	Chief Production Planner

15.	Employee Benefits, Personnel and Time keeping	Personnel Manager
16.	Stores and Supplies	Storekeeper
17.	Inspection & Quality Control	Quality Assurance Manager
18.	Repairs and Maintenance	Maintenance Foreman
19.	Cost Accounting	Works Accountant

Please note that the division of responsibility provided in Table 3.1 relates only to production and production related functions. Therefore, it should be visualised that we are looking at only the expense responsibility in this context. Vice-president — Apparel, for example, will also be responsible for marketing and hence profits.

It is possible to combine one or more of these expense responsibility centres into one if the volume of activity is small. Similarly it is possible to accumulate the cost of factory administration as an expense centre under the superintendent's responsibility centre. It is also possible to combine all the service department responsibility centres into one under the responsibility of the service superintendent. In such a case the information can be accumulated on different service departments as accounting expense centres. This is usually done for the purpose of responsibility reporting and can be seen in Illustration 3.2. What can be learned from this is that different functions and responsibility may be assigned to designated individuals. These individuals will be responsible for control over expenses and higher levels will be responsible for control of the overall results of several such subordinate responsibility units under their control.

Activity 4

Can you draw up a 'tree' showing the responsibility relationship to successive higher levels incorporating the 19 responsibility centres of Ibis Apparel?

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3.5 RESPONSIBILITY REPORTING

We have seen that controllability of expenses is the major criteria used in the evaluation of performance of the expense centres. Thus the framework for performance reporting is to be designed keeping this factor in mind. The control variables used in the performance reporting are the prices and quantities of inputs used by the expense centre. Normally the prices and quantities of the output are predetermined by the management. Thus the budget provided to the expense centre forms the basis of performance reporting of the expense centres. The objective of the expense centre is to minimise cost. Normally management by exception is used and the variances beyond tolerable limits from the budget forms the focus of attention.

Illustration : Responsibility Reporting

In order to illustrate how a responsibility accounting system operates and how information flows through the organisation, let us use the example of the Ibis Apparel Company. Please recall the organisation chart of the Ibis Apparel in Exhibit 3.1 and also the responsibility centres presented in Table 3.1.

In the company the Vice-president (apparel division) is responsible for the performance of the apparels business of the company.

Production function is the responsibility of the production manager, and the entire production activity is bifurcated into two segments, namely, production departments and service departments. Production departments are organised into various functions such as knitting, processing, cutting, assembly and finishing and packing.

We shall try to illustrate how the report of a production shop is linked to the report

received by the president of the Ibis Apparel Company. Exhibit 3.2 illustrates the reports for different levels of responsibility in the Ibis Apparel.

Exhibit 3.2
Ibis Apparel Company
Responsibility Reports

I Ibis Apparel
President's departmental cost report

	Budget		Variance Favourable (Unfavourable)	
	This Month	Year to Date	This Month	Year to Date
President's Office	Rs. 6,500	Rs. 19,500	Rs. (250)	Rs. (290)
Apparel Division				
Controllable by vice-president	114,150	316,750	(1,940)	(1,025)
Controllable by President	7,500	25,000	500	1,200
Total	1,28,150	3,61,250	(1,690)	(115)

II Ibis Apparel
Vice-President — Apparel's Cost report

	Budget		Variance Favourable (Unfavourable)	
	This Month	Year to Date	This Month	Year to Date
Vice-President's office	Rs. 5,250	Rs. 15,750	Rs. (240)	Rs. (200)
Production				
Controllable by the department	85,900	244,500	(1500)	(150)
Controllable by vice president	3,500	8,000	(100)	25
Service				
Controllable by the department	17,500	41,000	(500)	(750)
Controllable by vice president	2,000	7,500	400	(50)
Total	Rs. 1,14,150	Rs. 3,16,750	Rs. (1,940)	Rs. (1,125)

III Ibis Apparel
Superintendent's report : Production departments

	Budget		Variance Favourable (Unfavourable)	
	This Month	Year to Date	This Month	Year to Date
Suptd.'s office	Rs. 3,500	Rs. 12,000	Rs. 250	Rs. (50)
Knitting				
Controllable by the department	16,300	45,500	(500)	575
Controllable by the superintendent	3,200	9,000	(50)	100
Processing				
Controllable by the department	12,000	36,000	(350)	(500)
Controllable by superintendent	2,700	7,060	200	350

Cutting				
Controllable by the department	18,000	50,000	(750)	(850)
Controllable by superintendent	3,000	8,000	(150)	(225)
Assembly				
Controllable by the department	13,500	35,000	150	(50)
Controllable by superintendent	4,200	12,000	(50)	100
Finishing & Packing				
Controllable by the department	8,000	25,000	(250)	375
Controllable by superintendent	1,500	5,000	100	125
Total	**Rs. 85,900**	**Rs. 244,500**	**Rs. (1,400)**	**Rs. (50)**

IV **Ibis Apparel**
Foreman's report : Knitting shop

	Budget		Variance Favourable (Unfavourable)	
	This Month	Year to Date	This Month	Year to Date
Direct material	Rs. 5,600	Rs. 15,000	Rs. (600)	Rs. 350
Direct labour	7,200	20,000	(200)	(300)
Repairs and maintenance	1,000	3,000	200	350
Supplies	2,500	7,500	100	375
Total	**Rs. 16,300**	**Rs. 45,500**	**Rs. (500)**	**Rs. 575**

Starting at Part IV of the report, it shows the responsibility report of the foreman of the knitting shop. This report contains only items of costs which are controllable by the foreman of the shop. Items such as salary of the foreman, which are not controllable by the foreman of the knitting shop, are omitted from the foreman's report, but are included at the higher levels where they can be controlled.

The total cost of the Foreman's responsibility is included in the production superintendent's report, Part III of the Exhibit 3.2, along with similar information for the other production shops. The total of the Production supervisor's report finds a place in the report of the vice-president-apparel along with the total of the report of the service department superintendent.

The president's departmental cost report, part I of Exhibit 3.2, summarises the cost data from the apparel vice-president's report. Similarly, it should contain other divisional vice-president's report which we have omitted since we have restricted ourselves to the manufacturing operations.

3.6 SUMMARY

An expense centre is the lowest level of responsibility centre in an organisation. The manager of the responsibility centre is responsible for the expenses to be incurred by the centre. It is also possible to consider an expense centre as an accounting entity only for allocation and absorption of expenses incurred. As a responsibility centre, it is a segment of the organisation under the charge of a manager. One of the essential requirements for successful implementation of the expense responsibility centre is the clear understanding of the controllability of expenses at various levels of the organisation. An expense is considered controllable only if the centre manager can make decision which can considerably or significantly influence those expenses. Responsibility reporting of the expense centre must also take into account the

controllability of expenses. Only those items of expenses which are controllable by the manager are included in the responsibility reports.

3.7 KEY WORDS

Controllable cost is a cost that can be significantly influenced by the decision of a responsibility centre manager.

Exception report is a report made by a responsibility centre showing the planned and actual expenses of a period and the deviation of the actual from the plans. These deviations, which are the exceptions, form the basis of control.

Expense centre is a responsibility centre where the manager is responsible for expense incurred by the segment over which he has decision making authority. It is possible to have an expense centre merely as an accounting entity for the purpose of accumulating expenses, but in the context of a management control expense centre usually refers to expense responsibility centre.

Noncontrollable cost is a cost that cannot be significantly influenced by the decisions of a responsibility centre manager.

Responsibility report is a report providing information as to how well the manager is achieving the organisational goals and plans. It covers only the controllable factors under the manager's responsibility.

3.8 SELF-ASSESSMENT QUESTIONS/EXERCISES

1 Define an expense centre. Try to differentiate between expense centre as an accounting entity and expense responsibility centre.

2 Define controllable cost. Try to enumerate factors which can be used in evaluating the controllability of costs.

3 Explain the character of an expense responsibility report.

4 Mr. Bose is the vice-president – production of Calcutta Machinery Company. In your opinion which of the following costs would be controllable by Mr. Bose in any given month?

i) Cost of loose tools used in machining department.
ii) Cleaning costs of assembly department.
iii) Insurance cost of plant and machinery.
iv) Property taxes and municipal rates on the factory property.
v) Salaries of travelling salesman.
vi) Rework cost of defective production.

5 What are the difficulties in using input costs as a basis for evaluating the performance of an expense centre? How can we get over this problem in designing an evaluation framework? (Hint : expense centre manager has no control over purchases)

6 'Every responsibility centre manager in an organisation is an expense center manager also.' Do you agree with this statement and if so, try to demonstrate the same by giving examples.

3.9 FURTHER READINGS

Anthony, Robert N. and Richard F. Vancil, 1965, *Management Control Systems : Cases and Readings*, Richard D. Irwin : Homewood.

Cenchall, Robert H., Graeme L. Harrison, and David J.H. Watson, 1981, *The Organisational Context of Management Accounting*, Pitman : Marshfield.

Horngren, Charles T. and George Foster, 1988, *Cost Accounting : A Managerial Emphasis*, 6th Edn. Prentice-Hall of India Private Limited : New Delhi.

Solomons, David, 1965, *Divisional Performance : Measurement and Control*, Richard D. Irwin : Homewood, Ill.

UNIT 4 PROFIT CENTRES

Objectives

After you have studied this unit, you should be able to :

- understand the concept of profit centres
- integrate the concept of profit centres and the organisation structure of an organisation
- identify the important factors to be considered in the establishment of a profit centre
- understand and apply the basic requirement of a system of performance evaluation of a profit centre.

Structure

4.1 INTRODUCTION

As we have studied in the previous unit the main objective of establishing expense centres is to effect expense control. In the case of profit centres, expense control is only one of the several considerations. It should be noted at the outset that the box of expense centre, expense responsibility centre and profit centre are interrelated.

A profit centre is an organisational unit responsible for both revenues and costs. The profit centre manager has no control over the investment in the centre's assets. Profit centre managers are concerned with both the production and marketing of the products. The scope of activities of the profit centre manager is much more broader than that of a revenue centre manager because of the responsibility to produce the product most efficiently. Financial performance of a profit centre manager is measured in terms of achievement of budgeted profits.

A typical example of a profit centre is a division of the company that produces and markets different products. The manager of this division will be responsible for the setting up of production policies and the price as also marketing strategies. Even though the division manager may propose the investments in the division, the decisions are usually made by the top management.

Another added problem in the establishment and evaluation of the performance of profit centres is the determination of the profits of the divisions when products and services are provided to another unit within the organisation. When products and services are sold outside the company, profit determination does not pose any major difficulties. The challenges thrown by the system of profit centres is the need for establishing an internal mechanism to substitute for the market mechanism.

4.2 ROLE OF PROFIT CENTRES IN AN ORGANISATION

Effective management control in an organisation requires an effective system of evaluation of performance. From this point of view neither the expense centre nor a revenue centre can be an effective unit. What is considered a more effective mechanism from the point of view of expense or revenue control need not be so from the point of view of profits for the organisation. It is because of this reason that most

organisations try to concentrate on profit centre as the important unit for the purpose of control.

A profit centre helps the organisation to focus its attention on the most crucial variable in the operations of the organisation, namely, profit. The major advantage of having profit centre's is that it enables the top management to focus its attention and give advice to those segments which require them the most. In an organisation it will help the managers to strive for achieving the aspects of performance on which will be evaluated. This can act as an important motivator. Since the result of the activities of the managers are clearly made known to them it gives a sense of satisfaction from doing the job. The organisations can also use the profit centre and the results of the centre as a means of basing the compensation structure.

Activity 1

Can you try to define a profit centre? In what ways a profit centre is different from an expense centre?

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4.3 BOUNDARY CONDITIONS FOR PROFIT CENTRES

An organisation with several divisions is a complex as a whole. The divisions, however, are not separate entities in their own right. The design of profit centres in organisations will have to contend with the question of service functions centrally located in the headquarters which do not directly contribute towards performance of profit centres. We also have to consider the domain of the profit centres. Thus, defining the boundary conditions for the profit centres is an important aspect of the design of profit centres.

The major problem associated with the service functions is that there is no direct measures of profit which can satisfactorily evaluate the performance of the function. Even though the service functions are very important in the profit performance of the company as a whole, it is very difficult to isolate and measure their contribution. It may be possible to organise many service centres into profit centres and their services could be sold, but in most organisations they are intended to provide their services only to the organisation. Their services may not be used in sufficiently large volume if they are organised as profit centres. The examples of service functions are management information service, legal services, corporate planning department etc.

A plausible solution is to distribute the cost of service functions among various profit centres where such activity can be economically justified.

The major problem is to define the boundary conditions for the profit centre whereby we can balance the costs and revenues of the division. The major objective of the exercise is to ensure that we maximise certain revenues and minimise certain costs. Therefore, measurement of profits as the outcome becomes the major criteria in decision making within the division. This leads us to the most logical choice of accepting profit performance measurement as the major factor guiding the determination of profit centre boundaries.

However, we should not lose sight of the fact that what is good performance of the division need not always be the good performance of the company as a whole. Further, the profit centres should not result in conflict with other divisions within the organisation. These conflicts to occur in organisations when the divisional managers in their eagerness to achieve profit in their division lose track of the interests of other divisions. Appropriate boundaries for profit centres thus would ensure a more meaningful profit performance of the profit centre managers and act as better incentive.

Economic basis of the profit centre boundary revolves around factors such as market for the product, cost and revenues structure and the separability of their cost and revenues from the rest of the organisation, management objectives and above all the extent of operational freedom that is available.

Access to the market is very important with respect to profit centre performance in that the choice of market, adaptation of the product to market are necessary for maximisation of revenues.

Cost and revenues are separate from the rest of the organisation and the ability to influence them by the decisions of the division is a necessary condition for influencing profit. A manager should be evaluated only on the basis of items over which he has control. If most costs and revenues are not separable and controllable part of this is too small, profit centre may not be of much use.

Management must be willing to accept the profit performance of the division and be prepared to guide the decisions of the profit centres without curtailing their freedom. It should also be borne in mind that profit alone can never be the sole criteria for evaluation of the performance of a profit centre.

All aspects considered, however, rightly demarcated boundaries of profit centres will not produce any tangible benefit to the organisational unless the divisions have a reasonable measure of operational autonomy. The autonomy will have be to clearly understood within the context of overall rules of the game established by the top management. Autonomy is crucial in decision areas such as buying, production and its scheduling, inventory policies, choice of markets, product mix and pricing.

Activity 2

1 Try to prepare a check list of the boundary conditions for the establishment of profit centres in an organisation.

2 Can you try to list down the organisation requirements for the establishment of profit centres.

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4.4 PERFORMANCE MEASUREMENT OF PROFIT CENTRES

One of the most difficult problems to be encountered in the establishment of profit centre controls is the question of basis of performance measurements. Most of these problems will be simplified by having clearly demarcated boundaries for profit centres. However, a host of problems will still remain. These problems revolve around the question of measurement, the concept of profit to be used, the internal transfer prices and finally the question of compensation based on evaluation.

Basis of Measurement of Performance

It is a fairly difficult task to determine the basis of performance measurement for the profit centres. It is easy to say that the performance and contribution of a profit centre should be measured in terms of its profit contribution. However, the moment we settle down to do the same we face a host of tricky issues. If the contribution of a profit centre is to be evaluated on the basis of current profits, there arises the question of the goals of the organisation in the short run and in the long run. The short-term profit goals may not be in tune with the long-term profit goals of the organisation.

A proper definition of goals will lead to clear understanding with respect to at least the key performance areas. One of the major areas of concern is the question of current profitability as compared to future growth. Growth implies either absolute growth or relative growth with respect to industry. Growth also implies allocations of resources for future, often disregarding current profitability considerations. At times this can lead to contradictory objectives. It is possible that future growth considerations can be contradictory to current profitability objective. Growth requires market development for future which can be achieved at the expense of

current profit performance only. It contributes to future profits and hence it is a part of the present mangement's profit performance.

Another important factor is the future development which arises out of conscious research and development effort. The additional cost to be incurred on normal research and development effort may again act as a short run profit depressant.

Future market growth will depend on constant product improvement in tune with the changes in the environment. Here again the current profit objectives may be contradictory to the long run objectives of the organisation.

The competitive edge of the business is maintained by constant process of training and development of the personnel. The cost incurred on this count may be considered is relevant to the present profit goals of the management.

The Concept of Profit

The very idea of profit itself may pose a problem in profit measurement. The major question to be answered is: what is profit? Is it the book profit, the real profit or the profit contribution?

The **book profit** is fairly simple since the accounting methodology is reasonably specific with respect to the measurement and valuation. However, the accounting profit so determined would also pose problems of allocation of the expenses such as organisational expenses. The basis of allocation of common expenses would still be an important issue to be dealt with in determining the book profit. Any method of allocation is questionable.

No one would question the fact that the book profits have very little economic significance. Thus as a basis of evaluation one should resort to **real profits.** Thus the resources consumed should be taken at their economic value to the business in determining the profits. This would definitely take into account the valuations of the resources consumed, especially depreciation. The problem of allocation of common expenses will also have to be solved.

A major weakness of the profit measurement either as book profit or real profit in the context of profit centre performance is that they take into account expenses which are strictly not within the control of the profit centre management. This leads us to the option of **profit contribution** by the profit centre by taking into account the revenue earned by the profit centre and the expenses incurred by it over which it has control.

The question of Expression of profit

Another related question is how do we express the profit in the context of profit centres. Is it to be expressed as an absolute amount? Or as a margin on sales? Or as a rate of return on investment? Whichever way we express the profit it has its own significance. And all the questions relating to measurement of profit will be applicable in whatever way we express profits.

With the discussion that we had with respect to boundaries of profit centres, we can now bring in some more aspects relating to profit measurement. The objective should be to determine effectively the economic value of resources, both current and capital, used by the profit centre in the determination of its profit performance. This will further pose another important problem in the context of a multi-divisional organisation. When different profit centres act as suppliers and users of resources within the same organisation the question of transfer prices becomes very relevant in determining the profit centre performance.

Transfer prices and profit centres

The profit centres need autonomy. This in turn implies the need for competitive intra-company transfer prices. There is bound to be a conflict of interest between segments of the same organisation and the need for complete freedom for profit centres to deal with outside markets. Profit centres as buyers and sellers should be able to negotiate the prices of intra-company transfers independently and with least amount of arbitration. This question is dealt with in detail in the next unit.

Activity 3

1 What difficulties are to be sorted out before designing an evaluation system for profit centres?

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2 Can you try to enumerate the problems associated with 'profit' and its measurement for a division?

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Problem of Analysis of Profit Centre Results

Apart from the profit measurement and associated problems, there is also the problem of understanding the performance itself. Usually profit centre performance will have to be evaluated against some standards and the most common practice is to evaluate the same against the budgets. The variances occur as a result of the combined influence of a host of factors. Unless these influences can be segregated and understood the major objective of control would not be achieved. Further, reliance on the total deviation without isolating the controllable and non-controllable aspects of the variations may have demotivating impact on the managers.

The problem will also be different when the division is a single product or a multi-product division. However, in the case of a multi-product division the problem may be more complex.

We shall try to analyse the variances of net income before tax for a profit centre. We use the data of Ibis Apparel presented in Tables 4.1 and 4.2 for this purpose. For the sake of simplicity, we have grouped the products into two major groups and we will use the average data for each group as the per unit information.

Table 4.1

Ibis Apparels

Master Budget Sales and Expense Data for Period 1

(In 000)

	Products				
	Undergarments		Outergarments		
	Per Unit	Total	Per Unit	Total	Master Budget
Sales in units		7,000		8,000	15,000
Sales Revenue	Rs 10.00	Rs 70,000	Rs 40.00	Rs 320,000	Rs 390,000
Variable expenses:					
Manufacturing	4.00	28,000	15.00	120,000	148,000
Marketing	2.00	14,000	8.00	64,000	78,000
Total variable expenses	Rs 6.00	Rs 42,000	Rs 23.00	Rs 184,000	Rs 226,000
Contribution margin	Rs 4.00	Rs 28,000	Rs 17.00	Rs 136,000	Rs 164,000
Fixed expenses:					
Manufacturing					Rs 60,000
Marketing					75,000
Administration					14,000
Total					Rs 149,000
Net profit before taxes					15,000

Table 4.2
Ibis Apparels
Actual Sales and Expense Data for Period 1

	Products				
	Undergarments		Outergarments		
	Per Unit	Total	Per Unit	Total	Actual Total
Sales in units		10,000		5,000	15,000
	Rs	Rs	Rs	Rs	Rs
Sales Revenue	9.00	90,000	50.00	2,50,000	3,40,000
Variable expenses:					
Manufacturing	3.50	35,000	20.00	100,000	1,35,000
Marketing	1.50	15,000	10.00	50,000	65,000
Total variable expenses	5.00	50,000	30.00	1,50,000	2,00,000
Contribution margin	4.00	40,000	20.00	100,000	1,40,000
Fixed expenses:					
Manufacturing					50,000
Marketing					65,000
Administration					15,000
Total					1,30,000
Net profit before taxes					10,000

On comparing the budget and actuals presented in Tables 4.1 and 4.2 we find that the profit before tax is down by Rs. 5,000 from the budgeted figure. Let us disaggregate the information and see the actual influences so as to understand the performance of the profit centre. As a first step towards this we try to construct the flexible budget for the division. Table 4.3 presents the flexible budget calculations.

Table 4.3
Ibis Apparels
Calculation of Flexible Budget for Period 1

Sales revenue	(actual units sold	×	budgeted selling price)		
Undergarments	10,000	×	Rs 10.00	=	Rs 100,000
Outergarments	5,000	×	40.00	=	200,000
Total	15,000				300,000
Variable Expenses:					
	(actual units sold	×	budgeted variable expense)		
Undergarments					
Manufacturing	10,000	×	Rs 4.00	=	Rs 40,000
Marketing	10,000	×	Rs 2.00	=	20,000
Total					Rs 60,000
Outergarments					
Manufacturing	5,000	×	Rs 15.00	=	Rs 75,000
Marketing	5,000	×	Rs 8.00	=	40,000
Total					Rs 115,000
Total Manufacturing variable expenses					Rs 115,000
Total Marketing variable expenses					60,000
Total					Rs 175,000

Table 4.4
Ibis Apparels
Calculation of volume-mix and expense-price variances of period 1

	1 Master Budget	2 Flexible Budget	3 Actual	(1–2) Volume and mix	(2–3) Expense and price
Sales units	15,000	15,000	15,000	0	0
Sales revenues (Rs'000)	390	300	340	90 U	40 F
Variable expenses : (Rs'000)					
Manufacturing	148	115	135	33 F	20 U
Marketing	78	60	65	18 F	5 U
Total Variable expenses	226	175	200	51 F	25 U
Contribution Margin	164	125	140	39 U	15 F
Fixed expenses (Rs'000)					
Manufacturing	60	60	50	0	10 F
Marketing	75	75	65	0	10 F
Administration	14	14	15	0	1 U
Total fixed expenses	149	149	130	0	19 F
Profit before taxes ('000)	15	(24)	10	39 U	34 F

Notes:

1 Sales Volume Variance = Master budget average contribution margin per unit × (Actual sales units − Master budget sales units) = (Rs.164,000/15,000) × (15,000 − 15,000) = 0.

2 Sales mix variance = (Flexible budget average contribution per unit − Master budget average contribution per unit) × Actual sales unit = [(Rs. 125,000/15,000) − (164,000/15,000)] × 15,000 = Rs. 39,000 U

Sales Volume and Mix Variances

From Table 4.4 it is easy to understand the actual performance and see how the decline in profit-after tax of Rs. 5,000 has resulted. We can see that the total sales volume of 15,000 has not change and hence no loss is attributable to volume variance. However, the sales mix does change and the drop in sales of high contribution outergarments results in a combined loss of Rs. 39,000, despite an increase in sales of low contribution undergarments. That is, the company has lost a contribution of Rs. 51,000 on outergarments and gained a contribution of Rs. 12,000 on undergarments, thus incurring a loss of Rs. 39,000 on account of sales mix change.

	Undergarments	Outergarments
Master budget contribution Margin per unit	Rs 4.00	Rs 17.00
Budgeted sales units	7,000	8,000
Sales mix %	46.67	53.33
Actual sales	10,000	5,000
Actual sales mix %	66.67	33.33

Price and Expense Variances

The Rs 40,000 favourable price variance in Table 4.4 arises from the fact that the

average actual sales price exceeded the average flexible budget sales price. This can be disaggregated by products as follows :

Undergarments (Rs 9.00 – 10.00) × 10,000	=	Rs. 10,000 U
Outergarments (Rs 50.00 – 40.00) × 5,000	=	Rs. 50,000 F
		Rs. 40,000 F

The total expense variance is Rs. 34,000 favourable which can be disaggregated as follows:

Manufacturing variable	Rs. 20,000 U	
Manufacturing fixed	10,000 F	Rs. 10,000 F
Marketing variable	Rs. 5,000 U	
Marketing fixed	10,000 F	Rs. 5,000 F
Administration		1,000 U
Total		**Rs. 14,000 F**

Now we have a clear idea as to which segments of the business have contributed towards gains and which segments contributed towards losses. This information will help the profit centre management and the top management to tackle the situation better.

Summary of variances

Sales Mix variance	Rs. 39,000 U
Sales Price variance	40,000 F
Expense variances	14,000 F
Total	**Rs. 5,000 F**

This analysis explains the actual performance of the profit centre.

4.5 PROFIT CENTRE AS A MOTIVATIONAL TOOL

There is considerable debate relating to the use of profit centre concept as a motivational tool. Profit centres assign the profit responsibility of the segments to their managers. The basis of evaluation may vary from organisation to organisation. It may be based on the absolute profit or on the ratio of profit to the resources used.

The different arguments supporting the value of profit centre as a motivational tool can be summarised as follows :

1 A profit centre manager is perceived to have a higher status in the organisation and hence provides a psychological benefit to the division manager. It is argued that this perceived importance motivates him to perform better. By making the managers responsible for the profit performance of their divisions it tried to blend their objectives with the profit objectives of the company.

2 Profit centres tend to enhance the profit consciousness of the managers and subordinates within the division and hence they all strive for maximising the profits of the division. This leads them to become conscious about the expenses in the division. They constantly try to evaluate every expense decision in the context of its relationship to profits.

3 The position of being a profit centre, manager in an organisation brings in a sense of pride and belongingness, which in psychological terms provides sustenance for the needs of self-actualisation and self-esteem. Most of the organisation theorists argue on these lines.

4 The freedom and authority given to managers imbibe a sense of independence and responsibility in the profit centre managers enabling them to strive for better performance.

All these arguments are essential or inter-related and may at least partially contribute towards better performance when combined with a realistic system of rewards and punishments.

Studies in this regard show that majority of firms in India consider the enhancement

of the profit consciousness amongst managers as the greatest motivational contribution of profit centres.

The discussion we had in the previous section relating to the idea of profits, its measurement and expression has a lot of relevance in the motivational context of profit centre managers. The problem is very tricky in that any idea of profit which tends to understate the profits will have a demotivational impact on the management. On the other hand, any idea of profit, which tends to over-state the same will not be in the interest of the organisation in the long run.

4.6 PERFORMANCE RELATED COMPENSATION

The issue of compensation relating to profit performance is closely linked to the question of motivation of the divisional managers and subordinates. The system of evaluation based on profit performance of the profit centres will have to be related to the incentive system in the organisation in such a way that the profit centre managers are motivated to maximise the contribution to the overall profits. This should take into account the profit contribution in the short and long runs.

An objective measurement of profit of the profit centres will itself go a long way in motivating the divisional managers. However, this can be further strengthened by an effective system of compensating for the performance.

The system should also ensure sufficient freedom to the profit centre managers for taking decisions to ensure planned performance. The organisation should create a climate and structure which will ensure such operational freedom.

The amount and nature of compensation should be determined in the overall context of the organisation. Normally the evaluation should be done at a collective level and the incentives should be realistic in the context of compensating for the real contribution of the profit centre managers.

4.6 SUMMARY

Profit centres aim to focus attention of the managers on control by making them responsible for both revenues and expenses of the centres.

Establishing and operating control system based on profit centres poses many practical difficulties such as deciding on the basis of profit measurement, allocation of expenses, and inter-divisional transfer prices.

A major problem to be confronted in establishing profit centres is the very question of the boundaries of the profit centres within the organisation.

Profit centres may act as important motivational tool in organisations. There is evidence to show that they imbibe a sense of profit consciousness among division managers.

The establishment of profit centres and the evaluation of performance using profit measures pose several tricky questions arising from combined influence of a host of factors.

Profit centres, in order to be really effective and enduring in an organisation, would also require a performance related compensation system which may again pose several practical difficulties in the implementation of the idea.

4.7 KEY WORDS

Book profit: Profit measured by matching revenues and expenses of an accounting period according to generally accepted accounting principles.

Boundary conditions of profit centres: The boundaries of divisions in an organisation should be so determined that overlapping is avoided. Where certain revenues and

expenses are attributable to a particular division, they should be assigned only to that division.

Performance evaluation: The process of assessment of the result of operations of the division by comparing against predetermined standards. The basis of such evaluation need not be restricted to any one variable.

Profit centre: A division of an organisation which is responsible for both revenue earned and the expenses incurred by it. Such a division is usually evaluated on the basis of profit or a variant of it. As a general principle the measurement is restricted to revenues and expenses over which the division has control and hence the profit so measured may be different from the profit in the accounting sense.

Profit contribution: This is actually the contribution made by a division towards the profits of an organisation without setting off all those costs incurred by the organisation over which the division has no control.

Real profit: The profit determined by valuing the resources consumed by the division at their economic value to the business and not their historical cost.

Variance: Deviation of actual result of various elements of cost and revenue from the planned levels.

4.8 SELF-ASSESSMENT QUESTIONS/EXERCISES

1 Evaluate the purpose of comparing actual net income against planned net income of profit centres. What problems, if any, may be confronted in this case?

2 How do the boundary conditions influence the measurement of the performance of profit centres?

3 In what ways does the idea of profit and the different bases of measuring profit affect the evaluation of profit centres?

4 How does profit centre motivate divisional managers?

5 What is performance related compensation? What are its advantages? What are the pitfalls against which we must guard ourselves before introducing the same?

4.9 FURTHER READINGS

Bhatia, Manohar L., 1986, 'Reorganising for a Decentralised Structure', *Economic Times*, January 4.

————————, 1981, 'Profit Centres in Large Indian Industries', *The Management Accountant*, December.

————————, 1982, 'Profit Centre Autonomy: An Organisational Experience' *Indian Management*, Volume 21, No 1, January.

————————, 1983, 'Motivational Value of Profit Centres : Myth and Reality *'Cost and Management'*, November-December.

————————, 1985, 'Integrating Management by Objectives (MBO) and Responsibility Accounting', *The Chartered Accountant*, Volume XXXIII, No. 11, May.

Dean, Joel, 1957, 'Profit Performance Measurement of Divisional Managers', *The Controller*, 25 September.

Dearden, John, 1968, 'Appraising Profit-Centre Managers', *Harvard Business Review*, 46, May-June.

Dearden, John, 1960, 'Problems in Decentralised Profit Responsibility', *Harvard Business Review*, 38, May-June.

Parker, Lee D., 1979, 'Divisional Performance Measurement : Beyond an Exclusive Profit Test', *Accounting and Business Research*, 9 Autumn.

Solomons, David, 1965, *Divisional Performance : Measurement and Control*, Homewood : Richard D Irwin.

UNIT 5 TRANSFER PRICING

Objectives

After studying this unit you should be able to :

- understand and differentiate transfer pricing from external pricing
- appreciate the need for transfer prices in a situation where two or more divisions exchange goods or services
- evaluate the different problems of fixing transfer prices in the context of a divisionalised organisation
- appreciate the importance of transfer pricing in taking correct production and selling decisions.

Structure

5.1 INTRODUCTION

Large businesses today are usually organised into different divisions for effective management control. In case of large multi-product companies each of the divisions may be large manufacturing units in their own right. When a company is organised into more than one division and if one division supplies its finished output as input to another division, there arise the question of transfer pricing. **Transfer price is the price at which the supplying division prices its transfer of output to the user division.** It is different from the normal price in that both divisions are a part of the same organisation and therefore there is only an internal transfer and not a 'sale'.

Transfer pricing refers to the pricing of flows of physical goods and services among the divisions of the same company. As the pricing of these flows is likely to have an impact on the performance evaluation of the divisions, the setting of transfer pricing policies within the company has great significance. It is possible that any given policy may favour some divisions and disfavour others.

The issue of transfer pricing acquires added significance when accounting is to be used for the purpose of divisional performance measurement. The major significance of transfer pricing is that it will be used to measure the notional sales of one division which uses the transferred output as its input. Thus the transfer price used in the organisation will have significant effect on the financial performance of different divisions. This brings forth the need for establishing a transfer price free from all biases. It has to be as equitable as possible to the different divisions in the organisation.

Activity 1

a) Note down the conditions which make transfer prices necessary.

b) Can you try to construct a set of objectives for establishing a transfer price system

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5.2 TRANSFER PRICING AND CORPORATE POLICY

Introduction and operation of an effective system of transfer pricing in an organisation is entangled with at least three major aspects of corporate policy. They are : (1) divisional autonomy, (2) transfer pricing, and (3) performance evaluation. The first two aspects are specific ingredients of general area of corporate control.

Most large organisations may be divisionalised. The divisional managers' freedom of action is not complete. Divisional managers are to make periodic reports to the headquarters. The corporate policy on this may include :

a) the level of details in these reports,
b) the accountability of decisions and actions,
c) the frequency of over-ruling of the divisional managers' decisions, and so on.

The headquarters closely controls those aspects which affect the operations of other divisions. This includes quantities of output transferred among the divisions as also the price at which the transfers take place (the transfer price).

Apart from control considerations the headquarters must also be concerned with policy regarding evaluation of performance of the divisions. The evaluation of performance of the divisions is necessary for the 'rewards' and 'punishments' to be decided for the divisional managers. The rewards and punishments of the divisional managers have to be based on some observable objective measures such as sales, profits, cost reductions, innovation and improvements and growth.

The corporate policy determination in the context of divisionalized firms involves two decision making levels. First the headquarters which sets overall performance evaluation and the corporate control policies and secondly by the divisions which set the enterprise level policies relating to discretionary controls such as physical outputs, prices, and the like.

The divisional managers who control enterprise level variables would like to maximise their benefits. The benefits depend on the evaluation criteria set by the headquarters. The outcomes depend on the corporate control policies and environmental factors. The environmental factors such as market conditions, competition prices, taxation and so on are exogenous or given for any enterprise. Most of this environmental variables may be uncertain and will force the divisional manager to take decisions under uncertainty.

The benefit to the headquarters depends on the outcomes of the subsidiaries. Since the outcome of the subsidiaries are uncertain the outcome of the total entity also become uncertain. Thus the headquarters also faces the problems of making decisions under uncertainty.

It is in this context of setting corporate policies relating to evaluation and control that we have to look at transfer pricing and its implications for performance evaluation and corporate control.

Activity 2

Can you map the relationship of corporate policy issues involved in establishing transfer price system?

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5.3 METHODS OF TRANSFER PRICING

In very general terms, transfer pricing methods can be classified into two broad categories. One, those methods that try to replicate or base their decisions on market relationships that could have existed had the divisions been independent companies. Second, those methods that try to modify substantially the physical and financial flows

that could have taken place if the divisions were separate companies. The first group of transfer pricing is usually referred to as market oriented transfer prices. The second group of transfer pricing methods are variously referred to in the literature as **low transfer pricing methods, ad hoc methods or instrumental methods.** The basic principle followed in the second method is to take advantage of the fact that the divisions are part of the same company.

In common practice three bases of transfer pricing are used. These are **current market prices, manufacturing** costs or **negotiated prices.** The first falls under the market oriented scheme and the second and third are based on instrumental method.

We have so far discussed transfer price in the most frequently encountered situation of inter-divisional transfer of goods and services. However, it could also be beneficially used in situations where costs are to be allocated to different user segments of any common facility for which costs are incurred.

Market Price

One of the most practical and rational basis of determining transfer price is the market price. The price is readily available and it represents the current sales (realizations) in the open market. Whenever there is a well established market for the goods or services to be transferred and the divisions involved are not highly dependent on each other, market price may be easily determined. In such cases market price may be considered as the ceiling limit for transfer prices. This is for the simple reason that a captive and ready market for the output to be sold may warrant a lower price.

Under certain circumstances deviation from market oriented transfer price may be justified. Some instances are :

- where the products involved are highly specialised and a ready market does not exist, market-price determination will be more difficult.
- where it is necessary to take advantage of economies of scale in the production of some goods or services.
- when it is necessary to shift resources from low priority to high priority divisions.
- where considerations of taxation are applicable.

However, one should not overlook the fact that a perfectly competitive market does not exist in the case of most products. Further, it should also be borne in mind that in order to strictly compare the prices, a host of factors such as quality, grade, credit, delivery time and supporting services will all have to be taken into account. It may also be noted that market prices may be 'rigged' at times due to various factors such as shortages, dumping, speculation and so on. Thus such temporary prices shall not be used for the purpose of establishing long range pricing. Such temporary prices are also not useful for comparisons of long run repetitive large volume—in most cases whole output — transactions. Market based transfer pricing methods are more commonly used than instrumental method. They have some important advantages.

- They are one of the most simple and easily understood method.
- They minimise the complications for performance evaluation.
- They reduce points of conflict between various divisions.
- They are usually consistent with the environment outside.

Adjusted Market Price

It should be understood that the inter-divisional transfers in most situations cannot replicate a competitive market situation. A division may have the advantage or disadvantage of being a captive buyer or captive supplier. Capacities may be related which are different from the economically competitive capacities to take advantage of the synergies of integration or to remove the uncertainties attached with the supply of critical items by outside parties, etc. These and many other factors may be considered while fixing the transfer prices. They will thus justify the setting of transfer prices based on adjusted market price. The extent of adjustment to market price will still have to be decided.

Manufacturing Cost

When perfect market does not exist for the product involved, manufacturing cost

becomes the commonly used base for transfer pricing. Even in this case the company must decide as to which costs to use, whether it is actual costs, standard costs, budgeted costs or marginal cost. It is easy to demonstrate that if there exists no intermediate market the realistic transfer price should be based on long run marginal cost. From the practical point of view it could be argued that since standard costs are generally engineered costs it would probably be the best choice for a transfer price.

Another important problem which would be encountered in using manufacturing cost as the basis of transfer price is the costing methodology and the problems of various cost allocations necessary for determining manufacturing cost itself.

Whenever the corporate level wants to influence the sharing of profits between its divisions, for one reason or another, it may try to do so by using either a markup on costs or use different bases of costing. The alternative methods which could be applied for a cost based transfer pricing system can be many and varied, such as:

Actual unit full cost
Standard unit full cost
Actual unit full cost with a fixed markup
Standard unit full cost with a fixed markup
Actual unit variable cost
Standard unit variable cost
Actual unit variable cost with fixed markup
Standard unit variable cost with fixed markup
Marginal cost
Free transfers

All these methods can be considered as low price methods, assuming that costs are comparable with competitors. The variations are determined by the inclusion or exclusion of markup and the fixed cost elements.

Negotiated Price

In most practical situations we find that ultimately it can be negotiated price whether we use market price or the manufacturing cost as the basis for determining transfer price. This price can be based on manufacturing costs plus an extra percentage added to approximate market price.

Whatever basis is chosen, the company should be careful in avoiding arbitrary price being imposed on the divisions. Such arbitrary price may be rewarding to one division and penalising to another division. Attempts to shift profits from efficient divisions or to charge costs to other divisions on the basis of ability to bear should be avoided. Such practices will distort the financial performance of divisions and stifle the very basis of divisional management.

Opportunity Cost as Transfer Price

In several cases we come across situations where the pricing of inter-divisional transfers based on market price or its variants becomes difficult because of the lack of existence of a reasonable market for such intermediates. This may also be the case where the supplier division is a monopoly producer or the user division is a monopoly consumer.

In such circumstances the transfer price is set by the central management. An ideal option for the central management will be to set the price at a level which equals the opportunity cost of the supplier division and the user division. Both divisions under these circumstances will be encouraged to produce and consume that quantity which is optimal from the point of view of the company as a whole. If the user division fails to provide adequate orders for the supplier division the amount of contribution in respect of the production foregone due to lack of orders should be charged from such division. Similarly if the supplier division fails to supply the required quantity to the user division, the amount of contribution attributable to the production foregone as a result of the short supply should be charged from the supplier division.

The practical difficulty is that the divisions will tend to overstate or understate their opportunity cost so as to influence the transfer price to their advantage. It will be necessary for the central management to generate and audit the opportunity cost data if opportunity cost as transfer prices is to be effectively used.

Activity 3

i) What conditions must exist for establishing transfer price based on the following?

a) market price or modified market price
b) different cost-based transfer prices
c) negotiated transfer price
d) opportunity-cost-based transfer price

ii) Can you prepare a matrix showing different transfer pricing models, situations ideal for each case, and advantages and problems of using different transfer prices.

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5.4 DECENTRALISATION AND PERFORMANCE EVALUATION

Every organisation aims at achievement of some group objectives. An important consideration in organising activities is the congruity between the objectives of the individuals in the group and the group. Where such congruity exists the group goals would be achieved automatically with the achievement of personal goals.

In reality, however, there is a natural contradiction between individual goals and the group goals. A basic contradiction which can be easily understood is the fact that the individual tends to want to put a small amount of effort into achievement of the group's goals and at the same time like to share a larger part of the benefits of the group's activities. It is in the context of this natural tendency that the group must impose some performance evaluation of the individual. The share of the individual in group-achieved benefits (or results) should be proportional to some observable contributions of the individual to the group's objectives. The group activities are to be left to the individuals and what success criteria are to be considered in the evaluation of the contribution made by the individual towards the group. The activity of the group to be left to the individual's decision will determine the degree of individual autonomy. The success criteria to be used for evaluating the individual's contribution to the group will determine the method of performance evaluation.

The set of observable success criteria may be taken to include absolute profit levels, profit rates, cost levels, revenues, market share, product improvements, increase in productivity and so on. Managers on the other hand base their controls on various variables such as quantities of inputs purchased and consumed, quantities of output produced, prices obtained on outputs, expense incurred on marketing, research and development, product improvements and so on. Please recall the overall performance evaluation given for various types of responsibility centres in Table 2.1.

It is generally agreed that there are three major principles for developing and implementing performance evaluation system:

1 The criteria and procedure of performance evaluation should be clear and explicit and the superior and subordinate should have common understanding prior to the beginning of the evaluation period.

2 The criteria of performance evaluation should be as accurate as possible.

3 It is ideal to use a multiple criteria of performance than any single criteria.

If we look at the control variables used by responsibility centres in Table 2.1 (in unit 2) we notice that in case of all the centres in a multi divisional organisation—using or providing goods or services from or to another division—the performance measurement will be closely linked to the transfer pricing used by the organisation. It is this central position of transfer pricing in the performance of evaluation of different divisions and the resultant organisational problems that makes it very crucial in the scheme of performance evaluations.

Activity 4

What are the problems which come up in transfer pricing in the area of performance evaluation.

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5.5 TRANSFER PRICING PRACTICES

There is a large amount of documented sources on the transfer pricing policies used by companies all over the world. These studies have documented various aspects of transfer pricing policies such as (a) its role as an overall component of reporting and control system in companies, (b) the effect of transfer pricing on intra-corporate conflicts, (c) variations in transfer pricing policies across the world, and (d) environmental constraints on use of transfer prices.

A brief summary of transfer pricing practices is as follows :

1 Companies tend to look at transfer pricing not just as a mere accounting exercise, but as an important tool in policy formulation towards achievement of corporate objectives.

2 Transfer pricing acts as a major source of political conflict within the organisation and this takes place irrespective of the method used for this purpose. Different methods may, however, increase or decrease the possibility of conflict.

3 Companies tend to use a variety of transfer pricing methods. However, the dominant among them are the market prices or the methods based on modifications of the market prices.

4 Even though many companies use transfer prices as a policy variable, it is not the major or principal policy variable.

5 International companies use conscious manipulation of transfer prices as an instrument of maximising achievement of corporate goals. An explicit example is the transfer of profits from subsidiaries to parent companies or other companies in the group through transfer pricing policies relating to supply of capital equipment or inputs by multinational companies.

5.6 SUMMARY

Large businesses are usually organised into divisions for effective management control. When the organisations get divisionalised, they face the problem of pricing the goods and services 'purchased' by one division from another from within the organisation.

Transfer price is the price established for inter-divisional transfer of goods or services. The process of setting transfer prices are closely related to the corporate policies on divisional autonomy and performance evaluation.

There are various methods of transfer pricing that can be used by an organisation. However, the choice will be determined by a host of factors such as nature of the product, policy of the company with respect to divisional autonomy, method of performance evaluation, and so on, The usual methods are based on cost of production, market prices, negotiated prices or opportunity cost of supplier and user divisions. It is a common practice to use any one of these methods as a basis and then to determine the actual transfer price by appropriate mutually agreed adjustments in the context of a particular company.

Transfer pricing has a direct impact on the issue of performance evaluation to be used by the company and hence is closely related to the question of motivation of the executives.

In actual practice companies use almost all the methods. The choice of methods is determined by the management policy and the particular situation of the company. Most commonly used methods are based on market prices. Companies consider transfer pricing important to the policy formulation for achieving the objectives of the company. The internal political structure of the organisation also plays a part.

Illustration

The Apparels division of Ibis Apparels uses yarn from Ibis Yarns, the spinning division which is operating at full capacity. The yarns division sells part of its output to regular outside customers at Rs 15.00 a unit. Apparels division has now offered Rs 10.00 a unit for the yarn. It sells its products in the open market only.

The yarn division has a variable cost of producing the yarn at Rs 8.50 per unit.

The cost structure of Apparel Division is estimated as follows:

Selling price	Rs. 100
Outside supplies	40
Ibis yarns' supplies	10*
Other variable costs	30
Fixed overheads	15
	Rs 95

* If yarn is available in the market at a price of Rs 15.00

The Apparels Division is operating at about 50 per cent of its capacity and the divisional management believes that a savi[illegible] Rs.5.00 per unit of yarn which is a major part of the Apparel divisions' input can give it a price advantage in the market and will be able to increase its capacity utilisation.

The company uses return on investment to measure the financial performance of divisional managers.

a) Assuming that you are the divisional manager of Ibis Yarns, will you agree to selling yarn at Rs.10.00 to Apparel Division? Why or Why not?

b) Will it be to the immediate economic advantage of Apparel Division if the yarn division supplied yarn at Rs.10.00 per unit? Explain.

c) Can you evaluate the managerial issues involved in this situation? What will be your stand if you were the President of Ibis Company?

Suggested answer

a) It is not advisable to supply Apparel Division with yarn at the rate of Rs 10.00 per unit. Yarn Division will lose Rs.5.00 per unit on quantity sold to Apparel division. The performance of yarn division will be adversely affected as it is to be evalauted on the basis of return on investment.

b) The nature of Rs.15.00 per unit fixed cost is the key to the question of deciding what is good for Apparel Division. These costs are to be incurred, irrespective of the volume of operations. Thus even if the yarn is purchased at Rs 15.00 per unit and a price cut of Rs. 5.00 is effected to increase the sales the contribution will still be positive as shown below :

Selling price	Rs.95
Less: variable costs:	
Outside supplies	– 40
Ibis yarns' supplies	– 15
Other variable costs	– 30
Contribution margin	Rs.10

The Apparel Division has a poisitive contribution of Rs 10 per unit even after obtaining the yarn at market price and effecting the required reduction in price to effect expansion in sales volume. Correct analysis will show that it is not necessary to obtain a price advantage of Rs.5 per unit from yarn division to make the price reduction possible.

There is no immediate advantage to be obtained by Yarn Division supplying the yarn at Rs.10.

c The best interest of the this company is served by the apparel division effecting the price cut to increase the volume and thereby reducing the per unit incidence of fixed costs.

Forcing the Yarn Division to supply at Rs. 10 per unit is not a valid argument since there is no real advantage to the company as a whole.

As the president of the company I would ask the Apparel Division to look elsewhere for maximising the margins than by artificially increasing the same by a temporary vailout from another division.

5.7 KEY WORDS

Cost based transfer price: A price determined for inter-divisional transfer of goods or services which are based on cost of such goods or services with or without the addition of a margin on the cost. Either the whole or some predetermined components of the cost form the base of such transfer prices.

Market price based transfer prices: A price determined for inter-divisional transfer of goods or services which are based on the market price of such goods or services, with or without any adjustment. Market price may be the base for determining the transfer price even though the exact price will be determined by the adjustment to be carried out.

Negotiated price: A price for inter-divisional transfer of goods or services which are determined by negotiations between supplying and user divisions. A price established in an 'arms length negotiation' is a free and fair negotiations as if these divisions where two independent parties to the transaction.

Transfer price: An internal selling price established for goods or services transferred between divisions of a divisionalised company.

5.8 SELF-ASSESSMENT QUESTIONS/EXERCISES

Steel Industries Ltd. (SIL) was formed by merging three independent units, Mini Steels Ltd. (MSL), Steel Rolling Ltd. (SRL) and Steel Fabricators Ltd. (SFL).

After the merger in 19X1 the three units have operated as three divisions of SIL, as if they were independent units, having their own sales force and production facilities. Each division management is responsible for sales, costs of operations, financing and working capital management.

SF division received a contract for structural fabrications. It uses rolled components from SR division. It also uses components from outside suppliers. SF used a cost figure of Rs.3,800 per ton for the rolled products manufactured by SR in preparing the bid for the contract. This cost was based on the information relating to standard variable cost of manufacturing, selling and distribution supplied by SR.

SR has an aggressive production and sales force catering to new rolled products according to the market demand. SR's average selling price for the rolled products to be supplied to SF is Rs.6,500. Sales of these components are growing in the market. SR has offered to meet the demands of SF regularly at the current selling price less variable selling and distribution expenses. SF has offered to pay standard variable manufacturing cost plus 20%.

The corporate management had so far never set a transfer price since the divisions had continued with their independence even after merger. Since the two divisions, now could not agree on the price, the corporate finance director intervened and suggested a price based on standard full manufacturing cost plus a mark up of 15%.

Needless to say both the divisions rejected the compromise suggestion. The cost structure of SR division's rolled components to be supplied to SF division and the three suggested transfer prices are given below :

Current market selling price	Rs.6,500
Variable manufacturing cost	Rs.3,200
Fixed manufacturing cost	1,200
Variable selling and distribution cost	600
	Rs.5,000
Transfer Price alternatives:	
Current market price less variable selling and distribution expenses (Rs.6,500 – 600)	Rs.5,900
Variable manufacturing cost plus 20% (Rs.3,200 × 1.2)	Rs.3,840
Full manufacturing cost plus 15% (Rs.4,400 × 1.15)	Rs.5,060

Required

1 Discuss the effect of each of the suggested transfer prices on the SR division. What would be the attitude of SR division towards intracompany sales?

2 Do you agree with the process of negotiation between SR and SF divisions as a satisfactory method of resolving the transfer price question? Explain your position.

3 What is the role of corporate management in the situation? Will you agree to the suggestion of imposing a transfer price in this situation? Explain your answer.

5.9 FURTHER READINGS

Benke, Ralph L., and James D. Edwards, 1980, *Transfer Pricing : Techniques and Uses*, National Association of Accountants : New York.

Bhatia, Manohar L., 1986, *Profit Centres : Concepts, Practices and Perspectives*, Somaiya Publications, Bombay (Appendix 1 – Transfer Pricing, pp. 259-272).

Holstrum, Gary L., and Eugene H. Sauls, 1973, 'The Opportunity Cost Transfer Price', *Management Accounting*, May.

Milburn, J. Alex, 1976, 'International Transfer Transactions : What Price?' *CA Magazine*, 109, December.

Solomons, David, 1965, *Divisional Performance : Measurement and Control*, John D. Irwin : Homewood.

Verlage, H.C., 1975, *Transfer Pricing for Multinational Enterprises : Some Remarks on its Fiscal, and Organisational Aspects*, Rotterdam University Press : Rotterdam.

Wells, M.C., 1976, 'Profit Centres, Transfer Prices, and Mysticism', *Abacus*, 4, December.

UNIT 6 INVESTMENT CENTRES

Objectives

After studying this unit, you should be able to :

- design an investment centre for an organisation
- define the investment base for an investment centre
- design appropriate measures for measuring investment centre performance
- suggest an appropriate financial control system which can eliminate investments over which divisional managers have no control.

Structure

6.1 INTRODUCTION

The responsibility centre concept acquires maturity in the form of investment centres. Here the manager is responsible not only for the profit but also for the assets under his disposal. An investment centre encompasses, additional problems with respect to what assets and liabilities should be included in the investment base of the investment centre and as to how the profits be related to assets employed.

An investment centre is responsible for the production, marketing, and investment in the assets employed in the segment. An investment centre manager decides on aspects such as the credit policies (investment in receivable), inventory policies (investment in inventories), and within broad framework. decide on the investment in equipment needed for the production and marketing of the products. Investment centre managers, unlike the profit centre managers, are concerned not only with the profits per se but also with the profit in relation to the amounts invested in the division. Financial performance of the manager of the division is measured by comparing the actual with projected rate of return on the investments of the centre.

6.2 INVESTMENT BASE

One of the major issues facing the extension of responsibility centre idea to investment centre is the question of what assets and liabilities should be included for determining the investment base of the investment centre. The problem here involves both the identification of the assets and liabilities, and their measurement. The answer to the above question is not available in the accounting theory. This issue has to be resolved from considerations of the best possible ways of motivating the managers. The inclusion of assets and liabilities in the investment base should be done in such a manner that it will motivate the managers to make the best decision with respect to acquisition, use and disposal of assets.

One of the essential requirements for effective delegation of authority is the assurance that the divisional manager will take the same decisions as the top. managment would have taken in a similar situation. It means that the divisional management will act in the best interest of the company. Of course, we have also seen in the earlier units that any system of decentralisation will depend to a great extent on the top management's way of evaluating the performance of the divisional manager in pursuing the goals of the company.

Traditionally, it is believed that both the above conditions is met when top management relies on the evaluation of the divisional managers by the return on investment. It is presumed that if the manager achieves a reasonable or acceptable return on investment under the division's control, the company will also earn satisfactory or acceptable return.

Activity 1

1) What is the importance of determining the right investment in the investment centre?

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2) What are the problems in using different investment bases for an investment centre

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6.3 MEASURING INVESTMENT CENTRE PERFORMANCE

Most of the problems faced in the context of investment centre relate to performance evaluation of the division. Normally, despite reliance on a large number of measures of performance, profit in some form or other is most prominent among the measures used.

Two of the most important profit related measures used in the investment centre context are the Return On Investment (ROI) and Residual Income (RI) measures.

Return On Investment (ROI)

Return on investment is the relationship between return (profit) and investment expressed as a percentage. The basic difficulty is in deciding on what should be taken as the return (profit) and what should be the investment base for relating the same. If these questions can be satisfactorily answered the computation is simple and it provides us with a comprehensive measure for comparisons and evaluations. Usually, the practice is to take the operating profit before interest and taxes as the profit or return for the purpose of performance evaluation of the operating units. The rationale is that the profit before interest and taxes is not influenced by extraneous factors such as financing or taxes over which the divisional manager may not have adequate control. Similarly, the investment base for the purpose is considered by taking into account only the operating assets which are available for use in the operations. Thus ROI can be defined as :

$$\text{ROI} = \frac{\text{Profit Before Interest and Taxes}}{\text{Net Operating Investment}} \times 100\%$$

Here again, in determining the net operating investment we have problem as to whether to use the written down value or the gross value of the fixed assets. The earning power of the assets does not vary with the changes in written down value. The net value of the assets will depend on the depreciation method used. A probable way out is to use the average value of the asset during its useful life.

An example will explain the computation of ROI. Consider the case of Ibis Company presented in Exhibit 6.1, which has a piece of equipment costing Rs. 1,00,000. The equipment has five year life and no salvage value. The equipment can generate a cash return of Rs.50,000 per annum. The equipment is depreciated on a straight line basis. The company has an expectation of minimum rate of return of 25% on investment.

Exhibit 6.1
Ibis Company
ROI Computation Using Net Book Value of Asset

	Year				
	1	2	3	4	5
Net Book Value at Beginning of Year (Rs.'000)	100	80	60	40	20
Cash Return (Rs.'000)	50	50	50	50	50
Less : Depreciation	20	20	20	20	20
Profit Before Taxes	30	30	30	30	30
Return on Investment %	30	37.5	50	75	150

ROI using gross book value of the asset will be 30% for all the five years since the profit before taxes is the same during all the years. (Profit Before Taxes/ Gross Book Value) × 100% :

$$= (30,000/1,00,000) \times 100 = 30\%$$

If we take average investment as Book value of the asset at the beginning of the period plus the book value of the asset at the end of the period divided by two i.e. (1,00,000 + 0) / 2 = 50,000, the ROI on average investment will be : (30,000/50,000) × 100 = 60%.

Residual Income

Under the residual income method the basis of evaluation is the income remaining out of profit before taxes after making provision for the expected return on the investment. The expected return on investment is considered as a capital charge. The idea is that the division bears a charge for the assets provided by the organisation to the division for its use. The efficiency of the division is to be gudged on the contribution beyond the expected return which may be based on the cost of capital or the opportunity cost of investment for the firm and the like. Following the example given in Exhibit 6.1 we present the residual income calculation in Exhibit 6.2

Exhibit 6.2
Ibis Company
Residual Income Computations Using Net Book Value

	Year				
	1	2	3	4	5
Net Book Value at Beginning of Year (Rs '000)	100	80	60	40	20
Profit Before Taxes (Rs.'000)	30	30	30	30	30
Less : Capital Charge 25% of Investment Base (Rs.'000)	25	20	15	10	5
Residual Income (Rs..000)	5	10	15	20	25

Other Performance Measures

ROI and RI measure the performance of a division given the investment base. In addition to these measures most organisations use performance yardsticks such as growth in market share, sales growth (actual achieved vis-a-vis the planned or budgeted performance), profit growth and so on. As we have seen in earlier units management needs such additional information to evaluate performance of the divisions. You will notice that most of these factors are implicitly included in the ROI and RI computations.

There are other factors such as the new product developments and personnel development of the divisions which may have an impact of reducing ROI or RI but will be adding towards the long term profitability of the firm. The top management will have to monitor these costs incurred though they may not generate current revenues.

Evaluation of a division has to be based on its overall contribution to the organisation rather than on any single factor which may measure only partial impact of the operations. Hence it is necessary to look into both efficiency and effectiveness. Vancil (see the reference in further readings) draws a distinction between efficiency and effectiveness as follows: "one way of contrasting effectiveness and efficiency is to say that efficiency means doing something right, effectiveness means doing the right something." To determine whether or not the divisional manager is effective, the parent company must rely on a variety of objective and subjective evaluation criteria. These criteria will be evolved considering the policy objectives of the top management. Needless to say, the policy objectives will vary from company to company and hence the criteria for evaluation will also vary from company to company.

Activity 2

Compare ROI and RI as the bases of evaluation of investment centre performance. Which of these measures will you prefer and why?

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6.4 MEASURING THE INVESTMENT BASE

We have seen in the previous section that performance evaluation of a division can be based on ROI and RI along with other criteria which the management may decide. Thus, even in the case of measurment of ROI and RI management policy may determine the variables which should be considered for the determination of return and investment base. Since there is no unique definition of either return or investment base it is necessary for us to evaluate the different ways in which the measures can be computed.

In the context of the investment centres, there are two most commonly used measures of investment base. The rationale for use of these measures is the control of the investment centre manager over the investments. One considers the investment base from the point of view of total assets and the other from the point of view of total minus current liabilities. A general condition that can be applied in this regard is that the investment base should include only the resources used in producing profits for the division. This necessarily implies that the assets under construction and those that are idle should not be included in the investment base. The process of exclusion should be carefully handled because if the investment centre manager perceives the return on any asset as not satisfactory he would prefer to idle the same.

Total assets include cash, receivable, inventory, and fixed assets. A major problem confronted in measurement of the investment base is the valuations of these different components on an independent company basis.

Cash in most organisations is controlled centrally in order to avoid the holding of idle cash. This will result in most divisions holding comparatively smaller amount of cash than in case of comparable independent companies. A common practice is to use in the investment base itself a measure of cash that would be normally required to sustain operations, in case the division is an independent company. This is done by computing the cash on the basis of a certain percentage of the turnover or payment requirements for certain number of days.

Amount of receivables are normally taken at their net values (net of any provision for uncollected accounts). This is reasonable in the sense that most divisional managers can influence the investment in receivable through the volume of sales, proportion of cash and credit sales, the period of credit granted and the efficiency of collection policies.

Inventories are generally included at their carrying costs since most divisions should carry sufficient inventory to sustain smooth operations and to take care of fluctuations in demand for its output or supply of its inputs. However, the accounting valuation

used may have to be considered in deciding the amount to be included in the investment base. If the inventory is valued on LIFO method under inflationary conditions the ending inventory values will be understated. It is a general practice to use standard or average cost for the valuation of inventories to compute the investment base.

Fixed assets are valued at cost and can be taken at their gross value or written down value. However, the problem we noticed in the case of LIFO method of inventory valuation is all the more complex in case of fixed asset valuation. The economic cost of the investment required in the fixed assets may be very different from that shown by the historical cost values.

The use of total asset as the investment base to measure the performance in terms of return on investment or the residual income tend to overstate the investment base. The division can obtain supply of some of the resources used by the division on credit and hence the total assets minus current liabilities will be a better measure of the investment or of the resources supplied by the organisation to generate the profit achieved. For the purpose of computation of the investment base, current liabilities are not deducted if the division has very little control over the current liabilities. When it has control over the payables the divisional management may use stretching of the liabilities so as to reduce the investment base. However, from a motivational point of view using the total assets as the investment base may be useful.

Valuation of Fixed Assets

For the purpose of measuring investment base in the investment centre, valuation of fixed assets poses the greatest difficulty.

Exhibits 6.1 and 6.2 illustrate the impact of net investments on ROI and RI using the net book value of the fixed assets. Exhibit 6.1 shows the ROI computations for each year based on the net book value of the assets at the beginning of the year. In the first year the ROI is 30% and increases over the five year life of the investment to 150%. The trend of increase in ROI will not change if we use the average investment in each year or the accelerated depreciation.

The picture is not different when we used the RI to measure the divisional performance and use the net book value of the asset as the investment base. The RI increased over the five year life of the asset from Rs.5,000 in first year to Rs.25,000 in the fifth year.

To avoid this artificial increase in the ROI or RI, when profit before taxes is constant, many organisations use the gross book value or the average investment over the life of the investment to compute the fixed asset portion of the investment base. We have seen that the ROI, using gross book value, is 30% in each year. Similarly the RI will be Rs.5,000 in each year if we use gross book value of the asset as the investment base.

The use of traditional reliance on historical cost and depreciation methods to calculate both income and the value of investment base is contributing towards this confusing picture. A more meaningful approach to solve the problems created by the gross and net book values of assets in measuring the investment base is to use the replacement cost of the fixed asset for this purpose. When we can determine the replacement cost of the fixed assets for all divisions and use the same for computation of ROI or RI we can obtain more meaningful and comparable ROI and RI figures across the divisions.

Activity 3

Discuss the problem of measurement of investment base. What are the special problems faced with respect to different elements of the investment base?

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6.5 PROBLEMS OF FINANCIAL CONTROL OF INVESTMENT CENTRE

We have seen in the previous section that determining the investment base is not that straightforward as one would like. The same conflicting ideas on determining the investment base also pose the problems in determining the financial control parameters in divisionalised companies.

As discussed earlier, two of the most important parameters of financial control in divisionalised organisations are :

1 Congruity of objectives, and

2 Ability of the top management to evaluate performance of managers in the context of objectives.

The divisional manager will take the same decision in a situation as top management might have taken in a given situation if the top management were doing the same job. In simple terms the top management should be assured that the divisional management will act in the best interest of the company in a given situation. This can be known as congruity of objectives.

The top management should be able to evaluate the quality of performance of the divisional manager in the context of the company's objectives.

We have seen earlier that a division's profit performance measured by ROI or RI is a comprehensive measure of the achievement by the division. This is based on the understanding that if divisions achieve satisfactory profit performance, the company as whole would also achieve the same. We have also seen that the divisions should be evaluated using different criteria; the rate of return earned by a division being one of the most important criteria. In this context it becomes necessary to have effective financial controls which will eliminate the possibility of such investments over which the divisional manager has little control. The controls should also try to eliminate the possibility of fluctuations in the investments caused not by the divisional manager's actions, since they result in the rate of return to fluctuate. If this could not be achieved the rate of return as a measure of performance would fail to motivate the managers.

6.6 SUMMARY

In the extension of the idea of decentralisation and divisionalised control, investment centre forms one of the highest forms of decentralisation. An investment centre is responsible not only for the revenues and expenses under the control of the division but also for the investment under the division. In reality we can say that the investment centre will be almost like a separate organisation for the purpose of control.

The evaluation of financial performance of the investment centres is normally carried out by using the return on investment or the residual income measure. Return on investment is the ratio of the measure of return obtained by the division to the investment used by the division for achieving the same.

Residual income is the profit before taxes less the capital charge. It is also possible to use different capital charges for different types of assets thereby influencing the decision to use the assets. In a capital scarce situation it will have the effect of setting priorities for the use of different type of assets.

In evaluating the performance of managers, the assets or investment over which they have control alone should be considered in the investment base. The valuation of assets forms an important problem in the profit evaluations of investment centres Therefore it is advisable that the measure used should preferably be one not influenced by the accounting valuations. One of the suggested modes of valuation can be the current cost of the assets.

Divisional performance should not be evaluated exclusively by the profit measures but by evaluating the efficiency and effectiveness of the operations of the investment centres and therefore measures such as market share, sales growth, product improvements and so on should also be taken into account in the evaluations.

Illustration

The average asset balances of the Apparel division's of Ibis for 19X1 are given below :

Cash		Rs. 2,50,000
Receivables		3,75,000
Inventory :		
Raw materials	Rs. 250,000	
Work in process	130,000	
Finished goods	245,000	6,25,000
Gross fixed assets	Rs. 2,500,000	
Accumulated depreciation	10,00,000	15,00,000
Total assets		Rs. 27,50,000
Current liabilities		Rs. 750,000
Equity		20,00,000
Total liabilities and equity		Rs. 27,50,000

During 19X1 the Apparel division earned a profit of Rs. 3,00,000 before taxes on total sales of Rs. 40,00,000.

1 Compute ROI using net total assets (that is total assets less current liabilities) as the investment base.

2 Compute RI using a capital charge of 10% on net total assets.

3 If the corporate management desires, the division to increase its ROI by 5% during 19X2, what change in the profit margin on sales or asset turnover ratio would be required?

Suggested Answer

1 Return on investment = (profit before tax/investment base) × 100%
ROI = (Rs. 3,00,000/20,00,000) × 100 = 15%

2 Residual Income :

Profit before tax	Rs. 3,00,000
Capital charge (Rs. 20,00,000 × .10)	2,00,000
Residual Income	Rs. 1,00,000

3 Plan for increasing ROI
Objective : ROI is to be increased by 5%
ROI = (profit/sales) × (Sales/investment) × 100%
Existing ROI = (Rs. 3,00,000/40,00,000) × (40,00,000/20,00,000) × 100
= .075 × 2.0 = 15%
Desired ROI = 20%

Increase in ROI by increase in profit margin :
20% = (profit/sales) × 2.0
(profit/sales) = 20%/2 = 10%

Increase in investment turnover :
20% = 7.5% × (sales/investment)
(sales/investment) = (20%/7.5%) = 2.67 times

6.7 KEY WORDS

Asset turnover: The ratio of sales to the investment base. It means the sales rupee generated for every rupee of investment and will influence the return on investment.

Capital charge: The charge made to the divisions for the use of assets provided by the organisation and the residual income is computed by setting off this charge against the income.

Gross book value: The historical cost of fixed assets used as investment base by some organisation.

Investment base: The investment taken for the purpose of computing the return on investment or the residual income. In a ROI computation this is the denominator.

Net book value: This represents the gross fixed asset less accumulated depreciation.

Profit margin: The ratio of profit to sales. It represents the portion of a rupee of sales which is available as a margin. It can be gross margin when the profit available after meeting the cost of goods sold is considered or operating profit margin when the cost of goods sold and all other operating costs of the period are considered.

Residual income: A measure of divisional performance computed as the difference between operating profit before taxes less the capital charge.

Return on investment: A measure of the performance of a division calculated as a ratio of profit to investment base.

6.8 SELF-ASSESSMENT QUESTIONS/EXERCISES

1. Differentiate between a profit centre and an investment centre. Which one do you think is a better device from the management control point of view and why?
2. What are the alternative methods of determining investment base? Bring out their merits and demerits.
3. What problems are likely to be faced in evaluating the performance of investment centres? Are the performance of investment centre and the performance of its manager two different things? Discuss.
4. Do the managers in charge of investment centres, in your opinion, really have control on the investment in their divisions? What could be the possible explanations?
5. Ibis Commodities Group is a division of the Ibis Company dealing in food products. The division is responsible for procurement and distribution of food products handled by the company. Residual income is used to evaluate the divisional managers. The company expects a 25% capital charge on division's investment. The residual income is computed by deducting the capital charge from the division's contribution towards company's profit before taxes. The investment base of the division includes closing balance of receivables, inventories and net fixed assets. Divisional managers have full control over current assets and current liabilities. Company policy is to minimise the investment in these assets. Fixed assets are the joint responsibility of divisional managers and corporate management.

   The divisional manager was in the process of preparing the budget for 19X3. Therefore he wanted the divisional finance manager to review the results of 19X1 and the first six months of 19X2.

   The information relating to performance of the Commodities Group is presented below:

Ibis Commodities Group

(Rs '000)

	19X2			19X1	
	Annual Budget	2 quarters Budget	2 quarters Actual	Annual Budget	Actual Results
Sales	2,000	1,000	1,100	1,700	1,680
Expenses:					
Direct materials	700	350	395	600	590
Wages	200	100	115	175	210
Administration	75	40	40	75	100
Depreciation	100	50	60	90	80
Other Expenses	50	25	20	40	40
Total expenses	1,125	565	630	980	1,020
Divisions's margin	875	435	470	720	660
Allocated Corporate expenses	300	150	120	270	260
Division's Contribution to corporate profit	575	285	350	450	400
25% Capital charge on divisional investment	500	275	250	400	375
Residual income	75	10*	100*	50	25

Divisions Investment

(Rs. '000)

	19X2			19X1	
	Budgeted Balance 31 Dec.	Actual Balance 30 June	Actual 30 June	Budgeted Balance 31 Dec.	Actual Balance 31 Dec.
Accounts receivable	300	260	250	200	225
Inventories	400	450	500	350	375
Net fixed assets	1,300	1,490	1,250	1,050	900
Total	2,000	2,200	2,000	1,600	1,500
Capital charge (25%)	500	275*	250*	400	375

Notes : Operations are more or less uniformly distributed throughout the years.
* Proportionate capital charge for the period.

Required :

1 Evaluate the performance of the division for the six months ended 30 June 19X2.

2 Critically examine the measurement, reporting and evaluation systems of Ibis Commodities Group and suggest what changes, if any, should be effected to reflect the division's responsibilities.

6.9 · FURTHER READINGS

Bhatia, Manohar L., *Performance Measurement of Profit Centres : Practices and Perspectives*, The Chartered Accountant, Vol. XXX, No. 9, March 1982, pp. 586–593.

Mauriel, John J. and Robert N. Anthony, 1966, 'Misevaluation of Investment Centre Performance', *Harvard Business Review*, 44, March-April.

Parker, Lee D., 1979, 'Divisional Performance Measurement : Beyond an Exclusive Profit Test', *Accounting and Business Research*, 9 Autumn.

Tomkins, Cyril, 1973, *Financial Planning in Divisionalised Companies*, Haymarket : London.

Vancil, Richard F., 1978, 'Measuring Investment Centre Performance', *Harvard Review*, 56, May-June.

Notes

UTTAR PRADESH
RAJARSHI TANDON OPEN UNIVERSITY

MBA-2.6
Management Control Systems

Block

3
MANAGEMENT CONTROL PROCESS

BLOCK III MANAGEMENT CONTROL PROCESS

This block introduces you to the process of management control. Though the process has back and forth movements, still it rests basically on a tripod. Accordingly, this block has three units.

Unit 7 deals with programming and budgeting. Control is exercised in the context of what is planned to be achieved. The 'what' of Control is provided by Planning, Programming and Budgeting which constitute the detailing of expected performance.

Unit 8 describes the areas of analysing and reporting. To be able to exercise purposive control, information in regard to the expected performance and actual achievements has to be identified, processed and presented.

Unit 9 looks into the performance evaluation. Based on the analyses and reports, evaluation of performance is required for initiating remedial action either to correct the shortfalls or to provide an acceptable basis for revising the norms themselves.

UNIT 7 PROGRAMMING AND BUDGETING

Objectives

The objectives of this unit are to familiarise you with:
- the significance of and need for programming and budgeting
- the anatomy of programming and budgeting
- different types of budgeting.

Structure

7.1 INTRODUCTION

In any control system, a selector, i.e. a device representing what should be happening, (constitutes) the basic elements. In an organisation, the selector is determined through a conscious management process, called Planning. Since planning is designed to orient actions, it invariably revolves around some well defined goals. The actions are meant to guide some system i.e. an organisation. Consequently, the set of goals will have to be in consonance with or compatible with the culture, ideal or mission of the organisation. The end result of the planning process is the plan. It needs to be adequately detailed and structured to identify and time the various actions, which will cumulatively lead to the achievement of the goals set. Detailed and structured plans have two axes: (a) physical, (b) financial.

The translation of the policies and activities planned for a definite period of time (completed before such period begins):
i) into physical terms results in programmes;
ii) into financial terms results in budgets.

The act of setting programmes is called programming; and that of budgets is called budgeting.

7.2 CLASSIFICATIONS

Programmes/Budgets may be classified into different types and looked at from different viewpoints:

a) Functional or Sectional:
   i) Sales
   ii) Selling and distribution cost
   iii) Production
   iv) Production cost
   v) Purchase
   vi) Plant utilisation
   vii) Administrative cost
   viii) Research and Development cost
   ix) Manpower
   x) Cash (to include capital items also)

b) Consolidated:
   i) Summary
   ii) Master (containing, inter alia, the revenue statement and balance sheet)

c) Expense — behaviourwise:
   i) Fixed
   ii) Flexible or multiple

d) Periodicity:
   i) Basic or long term
   ii) Current annual or annual business plan
   iii) Shorter period

e) Responsibility-wise:
   i) Cost Centre Budgets
   ii) Profit Centre Budgets
   iii) Service Centre Budgets

f) Emphasis or Approach:
   i) Production-Oriented (under seller's market situation)
   ii) Market-Oriented (under buyer's market situation)

g) Building Blocks:
   i) Principal (primarily financial, partly quantitative)
   ii) Subsidiary or Support (primarily quantitative, partly financial)

h) Management Style or level of participation: this classification is of course not very relevant in actual practice.
   i) Authoritative
   ii) Participative

Very often a judicious combination of some or all of the above classifications is attempted to obtain desired results.

7.3 THE PROCESS OF BUDGET SETTING

There are certain important issues that need to be examined and sorted out before starting the detailed budget setting exercise. These are as follows:

Corporate Objectives — Organisations having systematic and organised long range planning process will always have before them long-term objectives spelt out clearly and duly quantified. The organisations, which do not have such a system should also develop a broad outline about its objectives on a long-term basis, at least for two or three years. The objectives should be specially drawn in two respects: growth and profitability. Preferably these should be broken up into present products and lines of activities on the one hand, and proposed new products and new lines of activities on the other.

Corporate Profit Plan — Profit planning and budgeting are complementary to each other. Profit planning should precede the detailed budgeting exercise. But during the budgeting exercise itself some adjustments in the profit plan may also be required. By its very nature, profit plan is a summary plan, not backed by a detailed plan. From the practical point of view, it is always convenient to develop a broad profit plan and get it approved by the top management before a detailed budgeting exercise is taken up. There may be some changes in the profit plan itself later on. But still this approach of having an approved blue-print ready will obviate confusion and back and forth movements which are common to any budgeting exercise.

Nature of Markets — Rarely it is found that an organisation is operating exclusively in the buyer's market or in the seller's market. If that be so, the budgeting exercise would then relatively be a simple one. More often than not, an organisation will be found to operate under a combination of two types of markets — some of its products being in the buyer's market and some others enjoying the privilege of being in the seller's

market. Even the same product may be sold partly in seller's market and partly in buyer's market, once market segmentation approach is adopted. Such combinations have to be broadly determined, since it has a bearing on the marketing budgets.

Principal Budget Factor — The principal budget factor is also called key factor, limiting factor, critical factor or governing factor. It is defined as the factor, the extent of whose influence must first be assessed to ensure that the functional budgets are reasonably capable of fulfilment. Limiting factor may be in any of the operational areas, namely sales activity (demand, sales efficiency, warehouse space) plant capacity (machine hour, space, bottlenecks in key processes); raw materials (shortage, import restrictions); labour (general shortage, shortage of skills) management (technical knowhow, efficient and effective executives) and capital (fixed capital, working capital). Key factor may be of an enduring nature or of a purely temporary nature. But an adequate consideration of the magnitude or impact of such factors in existence during the budget period is a must in realistic budget setting :

Sales Forecast — Since sales is often the limiting factor, preparation of sales budget is generally the starting point in the budgeting exercise. Sales estimate or sales forecast is the basis of sales budget. Table 7.1 lists the various factors to be considered in arriving at sales estimate or sales forecast.

Table 7.1 list of factors for estimating sales

1) Analysis of the past sales to understand the trend of sales and also to forecast the future trends.
2) Analysis of field reports by salesmen as to expected sales.
3) Demand analysis and market analysis to ascertain market potential, market growth, market share, emergence of competition, competitor's strategy, product design, pricing trends, customer's habits and preferences etc.
4) Examination of general business conditions.
5) Examination of special business conditions.
6) Production capacity study (or availability study in case of a pure trading concern).
7) Profitability analysis through sales mix planning to ensure that the profit objective is fulfilled.

Spending for the Future — Spending for the future like training and development of people, industrial engineering, new product development and launch, developing an infrastructure for providing marketing intelligence and undertaking market research, etc. Needless to say, such expenses may not only not contribute to profits during the budget period it may even bring down the profitability, sometimes significantly. It is, therefore, necessary to segregate such expenses from pure operational expenses, at least for the purpose of understanding the budget-period performance and profitability in the right perspective.

After thoroughly evaluating the above issues and preparing some basic inputs as a sequel, the detailed budgets can be developed. Efforts should be made to direct the entire budget setting activities along systematic and logical lines.

In large and diversified organisations, budget setting exercise needs to be decentralised. Of course the summary budgets and master budgets have to be prepared at the corporate office. In order to ensure that a common wave-length is established among the people engaged in the budget setting exercise at different locations and units of the organisation, it is advisable for the corporate office to issue a set of policy guidelines. This should be finalised by the budget committee at the corporate office and circulated among the concerned units sufficiently in advance so that they in, turn, can also submit their respective budgets to the corporate office in time. It is imperative that the entire budgets are finalised and approved as well as the budget package circulated to all concerned, before the budget period starts.

Progressive companies, these days encourage rightly a participative process of budget setting. Budgeting should essentially be based on a combination of top-down and bottom-up approaches. Budgets developed through participative process would automatically have a much greater degree of involvement and commitment on the part of the people. This will have a favourable motivational impact in the organisation.

Activity 1

Describe the various steps in the budget setting exercise in your organisation and flowchart them. Critically examine the whole exercise from the viewpoint of what has been discussed in the above section.

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7.4 FLEXIBLE BUDGETING

While fixed budgets portray a more-or-less rigid plan based on one set of cond one level of activity, flexible budgeting system attempts to develop a series o for various levels of activity and under varying sets of assumptions. That is why flexible budgets are also called multiple budgets. The necessity of flexible budgeting arises when, due to tremendous uncertainties or turbulence in the environment, it is extremely difficult to prepare even a reasonably good sales forecast. An attempt is made, therefore, to develop several alternative sales forecasts, necessarily leading to the corresponding alternative levels for production capacity utilisation and accordingly the development of multiple budgets.

Conventionally, flexible budgeting system is associated with production budgets. But there is no reason why this concept should not apply to other areas too. In fact, the expense behaviour analysis forms the bed-rock of flexible budgeting and could be used in expense control.

The basic purpose of a flexible budget is to set standards for expense control and profit forecasting which are flexibly adjusted to the principal factors that cause cost to vary from period to period.

The variable budget as commonly conceived is a special kind of flexible budget which takes account of only one factor that influences cost behaviour, i.e. rate of activity. The break-even-chart is a diagrammatic presentation of a variable expense budget combined with a variable revenue estimate which is based on continuation of present prices. These charts are drawn on the assumption that wage rates, product, labour efficiency etc. remain unchanged and only rate of activity is varied.

It is desirable to try to broaden the concept of a flexible budget so as to include other major environmental influences, in addition to variation in output rate. This is more so because what is really wanted is an expense standard that will be used in a future period and that will be as nearly as alibi-proof as is practicable.

Such a budget provides flexible standards that are adjusted to take account of differences in activity rate, price levels, lot size etc., and are hence relatively alibi-proof. It furnishes the basis for a better understanding by executives of the forces that cause costs to vary. The expenses included in any executive's flexible budget should in principle be confined to those costs (and revenues) which are controllable by him at his level. This involves the basic concept of having different cost statements for different purposes.

The concept of a flexible budget should define the determination of the expense standard. It should show a costs, based on the forecasted activity as well as flexible budget standards based on the actual activity and other conditions of the period with the actual costs and departures. Such basic cost behaviour patterns could be used to.

- get a forecast of expenses based on forecasted sales;
- compute a flexible budget based on the actual volume and other conditions of the cost period;
- compare this with actual cost; and
- show departures from this alibi-proof standard.

Flexible Budgets should be distinguished from Break-Even analysis. already indicated, the variable expense budget is built on some basic cost-output relationship,

but it is confined to costs and is primarily concerned with the components of combined cost, since the purpose is to control cost by developing expense standards that are flexibly adjusted to activity rate. This purpose often leads to measures of activity that differ among costs and operations, so that they cannot be readily added or translated into an index of output for the enterprise as a whole.

Illustration 1

A single product manufacturing company is currently producting 12,000 units (at 60% capacity). The following particulars relating to its cost structure are available:

	Per Unit (Rs.)
Direct Materials	5
Direct Labour (variable)	2
Manufacturing overheads (60% fixed)	5
Administrative overheads (fixed)	2
Selling and distribution overheads (40% variable)	3
Cost of Sales	17
Profit	3
Selling price	20

You have to prepare a flexible budget for 60%, 80% and 100%, activity levels taking into account the following additional information.

1 If activity exceeds 60%, a 5% quantity discount on raw materials on account of increase in the total quantity will be received.

2 The present fixed cost structure will remain constant upto 90% capacity, beyond which a 20% increase in cost is expected.

3 The present unit selling price will remain constant upto 75% activity level, beyond which a 2½% reduction in original price for increase in activity by every 5% is contemplated.

Particulars \ Activity Level		60% (12,000 units)	80% (16,000 units)	100% (20,000 units)
		Rs.	Rs.	Rs.
1)	Prime Cost:			
	Direct Materials	60,000	76,000	95,000
	Direct Labour @ Rs. 2	24,000	32,000	40,000
		84,000	1,08,000	1,35,000
2)	Variable Overheads:			
	Manufacturing @ Rs. 2	24,000	32,000	40,000
	Selling & Distribution @ Rs. 1.20	14,400	19,200	24,000
		38,400	51,200	64,000
3)	Fixed Overheads:			
	Manufacturing	36,000	36,000	43,200
	Administrative	24,000	24,000	28,800
	Selling & distribution	21,600	21,600	25,920
		81,600	81,600	97,920
4)	Cost of Sales (1 + 2 + 3)	2,04,000	2,40,800	2,96,920
5)	Sales	2,40,000	3,12,000	3,50,000
6)	Profit (5 – 4)	36,000	71,200	53,080

At 80%, profit is the highest. Hence, of the three activity levels, 80% is the most profitable one.

Workings:

1 Direct Material Cost:
at 80% level : 16000 @ 5 less 5% = Rs. 76,000
at 100% level : 20000 @ 5 less 5% = Rs. 95,000

2 Fixed Costs:
Manufacturing : Rs. 3 (60% of Rs. 5 arrived at the activity level of 12000 units. Therefore, total fixed cost for = 12000 @ Rs. 3 = Rs. 36,000. Similarly, administration and selling & distribution items at 100%, fixed cost increases by 20%.

3 Sales:
at 80% level : 16000 @ Rs. 20 less 2½% = Rs. 3,12,000
at 100% level : 20000 @ Rs. 20 less 12½% = Rs. 3,50,000
(Price reduction @ 2½% for every 5% increase in activity level).

Activity 2
State whether the idea of flexible budgeting is being/can be used in your organisation.

i) If the idea is being used, describe the exact process and then critically examine whether it needs any improvements.

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ii) If the idea is not being presently used but otherwise can be used, design the content of a flexible budgeting system.

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7.5 MANUFACTURING BUDGETS

Both in production oriented budget and in market oriented budgets, the manufacturing division has the problem of translating production planning in the most economical and efficient manner. Manufacturing budgets aid management in attaining production at an even level and in controlling the use of material, labour and equipment.

There are two important factors concerned in budgeting for the manufacturing division:
- the development of a production programme in terms of units of each class of commodities to be produced, and
- an estimate of the costs that will be incurred in the completion of this programme.

The first factor refers to the **production budget**; the later refers to such **manufacturing budgets** as material, labour, factory overhead, plant and equipments.

Production Budgets deal with the:
- determination of the estimated volume of production;
- division of the estimated output into classes or types of production.
- scheduling of operations by days, weeks and months;
- establishment of finished goods inventory requirements;
- storage of finished products until delivery can be made in accordance with sales requirements.

The development of production budgets and the procedure followed in planning production are largely dependent upon the type of manufacturing activities which exist in an individual plant. But, management must determine in advance the most economical quantities, the most advantageous time to produce and the engineering specifications for both standardised mass production plant and also for job order plants. Though it is somewhat difficult to budget job order production as per customers' specific requirements and schedule of delivery, the management should budget production plans in the form of estimated labour hours, machine hours or units of each general type of products based on historical data to ascertain the elements and operations common to all orders. The products may also be grouped into classes (or

parts and processes). But, if the orders are received sometimes in advance, more detailed production programme can be prepared. Thus, to couch more detailed production budget in job-orders plant, budget period can be shorter, depending more upon the order booking than in a plant with mass production activities for standarised products.

Materials Budget should be based upon the production budget, as the direct materials to be used in production vary directly with the number of output. The development of materials budgets includes the preparation of estimates of raw materials required to produce goods as per production budget, time scheduling of raw materials purchased and controlling raw materials inventory.

Materials Budget, basically a list of both direct and indirect materials required for a particular budget period, is prepared with the co-operation of purchase, production planning and production departments and is based on the production programmes of different product groups within different time frames.

Another important factor for materials budget is to set properly the maximum and minimum inventories of each class and type of goods required to guard against the contingent factors e.g. delay in transportation, defectives etc.

The purchase department is generally held responsible for purchase budget derived out of the materials budget. Several factors should be considered in developing a good budget:

- working capital availability;
- storage space;
- cost of handling;
- obsolesence;
- insurance;
- market price.

Purchase budget will show production requirements in terms of estimated requirements and price of each class and group of materials on weekly or monthly bases. Indirect materials can also be included in the purchase budget under separate group or may also be treated as a part of factory overheads.

Labour Budgets are also mainly dependent on production programme. The factors to be considered are:

- Standard output per labour (average)
- Labour productivity (average & marginal)
- rate of labour turnover, of various groups
- wage payment plan
- incentives
- likely change in wage structure
- costing system in vogue
- effect of learning curve, etc.

Indirect labour costs are generally considered as a factory overhead but, sometimes, some groups of such workers are included in labour budget also.

Factory overhead Budgets: Generally overheads are divided into two classes : Fixed and variable. The classification can also be stated in other terms e.g. period cost and product cost, committed costs and managed costs etc.

The basic type of overhead budget is one which is prepared as a whole for the concern and which shows the estimated amount of each cost for the budget period. This overhead summary sheet should be supplemented by a detailed budget for each item of overhead and by a budget of the estimated costs for each service and production department.

The preparation of budgets for the fixed costs are relatively simple, as the amount can be estimated correctly. But, the number of such costs are few e.g. property tax, building depreciation, fire insurance, personnel cost to some extent. These costs could be estimated on the basis of historical data and likely changes in the future. These costs could be assigned directly or apportioned on a suitable basis to each service and production department.

The variable or controllable costs are more difficult to estimate. Items like consumables

I) REVENUE BUDGETS: Revenue budgets usually have three components which are explained below:

1) **Principal Budgets**

A) Revenue income or Earning Budgets:

i) **Order booking and gross profit budgets** — are specially applicable to industrial marketing or other such situations where there is a distinct time lag between the booking of order and effecting actual delivery and sales. This budget is a statistical budget and not an accounting one. But this is nevertheless important from operational point of view.

ii) **Turnover and gross margin budgets** — This is the main revenue income budget and is in line with the financial accounting definition of sales and gross margin. This budget has to be in conformity with the order booking and gross profit budget where there is one.

iii) **Other income budgets** — This would cover income from scrap sales, commission on third party sales, income out of after sales services beyond warranty period, commission on imports and exports on behalf of others, etc.

B) Marketing Expense Budgets

i) **Direct selling expense budget** — This will cover direct expenses on salesmen, sometimes sampling and direct mailing and a share of general and common overheads related to such activities.

ii) **Distribution expense budget** — This includes expenses on maintenance of sales depots and branches, expenses on transportation of goods and such other expenses.

iii) **Promotional expense budget** — This covers all expenses connected with advertisement and sales promotion including media advertisement, payments to advertising agencies etc. It may be noted here that company's prestige or image advertisement expenses should not be included here and should be taken care of in the head office and administrative expense budgets if the same can be distinguished.

iv) **Other marketing service budgets** — These include all expenses relating to marketing director's office, market planning activities, marketing research and such other general marketing services.

Total marketing expenses budget: This will be prepared after consolidating the four expense budgets, as above. This budget can be further classified on the basis of cost behaviour study, viz. fixed, semi-fixed and variable costs.

2) **Subsidiary Budgets;**

Depending on the needs and the degree of sophistication desired in the budgeting system, there could be various types of subsidiary budgets intended to provide supporting data and analysis with regard to the framing of the principal budgets mentioned above, including the various expense budgets. A few examples of subsidiary budgets are:

A) **Working Capital Budget**

This budget indicates the working capital requirements in terms of inventory and receivables in the marketing operations. This is turn helps in the determination of interest cost to be included in the expense budget and also the budgeted return on investment (ROI) in the marketing operations.

B) **Manpower Planning and Personnel Budget**

This budget depends on the decisions taken by the organisational leaders. While taking such decisions, the management attempts to meet simultaneously the goals of the organisation and the needs and values of their employees. Such decisions (planning relates to both financial and behavioural aspects whereas budgets relate to financial aspect only), may lead to:

- Improved understanding of the nature and scope of human resource expenditure;
- Improved selection, retention and motivation of employees;

- Wiser allocation of money for human resources;
- An overhaul of the approach to communication among managers, between managers and other employees, between the organisation and outsiders.
- An expansion of the scope of internal and external reports to deal with social as well as financial accomplishments.

C) **Expense Behaviour Analysis**
This requires segregation of fixed, semi-fixed and variable expenses of marketing operations. An analysis of expenses in this manner facilitates precise estimates of various heads of expenses covered under expense budgets. It would be obvious that expense behaviour analysis made and used at the time of preparing budgets not only puts the budget estimation on a sounder footing, but also helps in reviewing the various budget estimates. It also forms a scientific basis for subsequent comparison between budgeted expenses and actual expenses for the purpose of effective control.

D) **Demand Analysis**
This would establish a scientific basis for budgeting order bookings as well as turnover in respect of scientific products/divisions.

3) **Summary Budgets**
These are actually summarised Profit & Loss or revenue statement budgets prepared separately for:
- each important division or activity-group; and also for
- the organisation's total operations.

II) CASH BUDGET:

This is a forecast of cash position over a period of time, to reflect changes in the position within the same period. Conventionally, cash budget is considered to be an integral part of the total budgeting process and it is prepared only after all sanctioned of functional budget are in. However to instal better control on cash flow, the scope of operation of cash budgets can be expanded in two ways, viz., to cover each function or sub-unit separately and to develop a rolling cash flow plan for each sub-unit as well as the organisation as a unit. A format for such rolling plan is shown in exhibit 2. If an organisation adopts, say, a twelve-month rolling plan every month the figures in the format will be up-dated to cover the subsequent twelve-months. The comparison of actual with budgeted figures, which is necessary for the purpose of effective control, pertaining to the immediate previous month has also been shown in the format.

Exhibit 2
Cash Budget Format
(Under Rolling Period Basis)

Budget Actual Comparison Month–1		ITEMS	Month 1	Month 2	Month 3	etc.
Budget	Actual					
		A. Sales Receipts				
		1. Cash Sales & advances				
		2. Sundry Debtors Collection				
		3. Cash Subsidies, Rebate etc.				
		Total (A)				
		B. Operations Distribution				
		1. Cash Purchases & Advances				
		2. Sundry Creditors payment				
		3. Wages, Salaries etc.				
		4. Rent, Electricity etc.				
		5. Selling Expenses				
		6. Administrative Expenses				
		7. Tax paid (Income Tax)				
		Total (B)				

and other supplies, indirect labour, repairs etc. are prepared through the cooperation of the departmental heads and factory executives, considering production programmes and operating conditions for the period. Other items, e.g. power and other utilities; water, etc. could be estimated by the cost accountants with cooperation of engineers, based on the historical cost and the likely changes in future depending upon the budgeted production. However, all budgeted costs should be shown according to each class separately for both service and production departments.

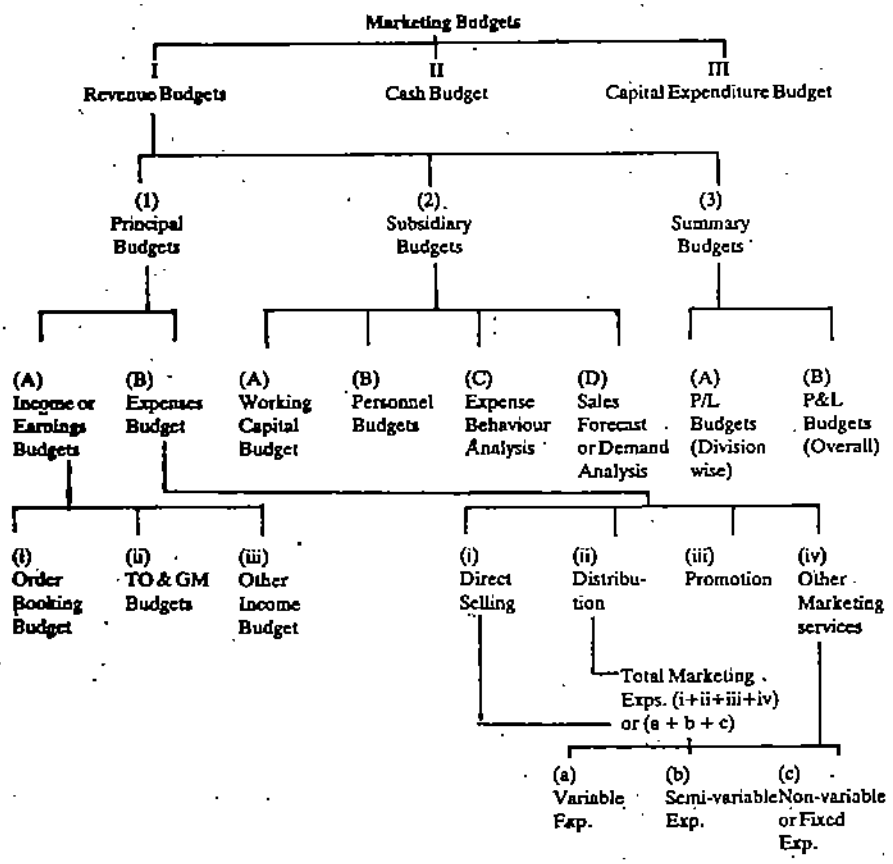
7.6 ADMINISTRATIVE BUDGETS

The functions executed by the management are extremely important and varied in scope. In addition to the directors' office, there are usually departments like general accounting, legal and secretarial, credit control, personnel relations, budgeting, statistical, research etc. Each of the functions requires budget allowances for salaries, supplies, utilities, depreciation, travelling, telephone and such other operating costs.

The preparation of administrative budget requires the same carefulness as required in preparing budgets of other divisions of the enterprise. The first step in the preparation of administrative budgets is the analysis of historical data in order to determine the minimum requirement for the efficient operation of each department. The plans and responsibility of each administrative section for the budget period must be studied and changes in planned operations must be projected into the budget estimates for each item of cost in order to provide a workable budget. A summary of the budgets of the respective departments should be prepared so as to present the total administrative division's budget.

7.7 MARKETING BUDGETS

Exhibit 1 shows the various types and components of marketing budgets.



	C. Cash Flow through	
	Operations (A–B)	
	D. Miscellaneous Receipts	
	(interest, rent, royalties etc.)	
	E. Capital Receipts	
	1. Debenture Issues	
	2. Term Loans	
	3. Issue of share capital	
	4. Sales of Assets	
	Total (E)	
	F. Non Operating Distributions	
	1. Interest & Financial Cost	
	2. Donations	
	3. Dividends	
	4. Capital Expenditures	
	5. Debt redemptions	
	Total (F)	
	G. Net cash flow (C+D+E–F)	
	Add: Opening Balance	
	Cash Position	
	Less: Minimum Cash Required	
	Bank Loan (Increase)/decrease	
	Cumulative Bank Position	
	(Drawing Power)	

III) CAPITAL EXPENDITURE BUDGET:

This relates to fixed assets like, building premises, furniture and fixtures, equipments, automobiles, selling aids e.g. projects, closed circuit T.V. etc. Budgets for capital expenditures, for marketing operations like the cash budgets, should be prepared initially by the marketing people for subsequent consolidation with the company's overall expenditure budgets.

Activity 3

As a manager or supervisor you must be concerned with some function or unit of your organisation. What procedure is being followed in preparing the budget for your function or unit and in what way do you contribute in that process?

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7.8 BUDGETING WITH NETWORK ANALYSIS

In any budgetary process, difficulties arise in compiling the yearly budget in time. Moreover, difficulties also arise in terms of the disruption of what is normally a carefully planned programme by the requirements of meeting budget deadlines. The problems may arise out of:

i) anxiety that the budget deadline will not be met,

ii) anxiety that lack of contributory information will impede the progress in the budget exercise,

iii) anxiety that the omission of a vital piece of information will lead to the revision of the whole budget,

iv) overwork when deadlines clash,

v) anxiety over the continuity of routine information in face of the extra work required to complete the budget.

Applied to budgetary preparation, the main purposes of using network analysis are:

i) Systematic correlation of independent elements in the budget plan;

ii) Timing of the production and receipt of information;

iii) Allocation of available resources to optimise utilisation;

iv) Identification of the sectors for pressure to be exerted to ensure completion by the set deadlines;

v) Identification of the interdependency of the whole plan for individual contributors.

The network technique is intended to schematise a complex operation. Its purp[illegible] to codify and not to elaborate. The technique by its well-established method, bring greater exactitude in the existing intuitive or formalised procedures of planning.

Now, three distinct compiling stages can be discerned:
- construction,
- provisions of estimates,
- resource allocation.

Construction of Network: Budget codification being a typical process in terms of planning requirements, there should be no major difficulty in filling the budget into the confines of network conventions. The majority of activities will in fact be:
- Calculation of figures,
- Assembly of information,
- Waiting for event.

and the majority of events will be :

- Commencement of calculations,
- Deadline for calculations,
- Meetings.

The degree of detail within the network can best be decided while it is under construction. No general criteria can be laid down for the varying task sizes involved. In principle each network must be of sufficient detail to ensure control of the separate activities as independent units, but not so detailed that essential trends are obscured. These opposing requirements are what compilers must constantly bear in mind. The main practical problem will be that the finer the degree of detail within the network, the more rigorous the time schedules, and the more precise the control over subsidiary activities. It is not merely sufficient to seek a high degree of control. The degree implicit within the network must relate to the degree of control which can **defacto** be exercised. If the two are not related, a network 'credibility gap' will be established, weakening the technique's effectiveness.

Timing and Network: After successful construction of network, (i.e., after verifying that the conventions have been obeyed and that the network is alright with regard to looping, dangling and other conceptual perversions), time must be assigned to the activities. The unit of measurement must almost inevitably be the 'day'. Assuming a maximum of 90 working days from start to finish, in a period of four months deadline should be laid down with a day of eight hours; some leeway for human error without damaging the accuracy of the network may be provided.

One potential difficulty in timing will in fact pose no problem. The use of 'normal', 'standard' or 'ideal' time for any activity is inappropriate to the technique and unless probability analysis is used, activity times will have to be taken as estimated actuals.

Since the whole purpose of using the technique is to find a critical path in the network, and then exert pressure on activities along its length, the initial building into the estimates of spare time as a contingency for late presentation must be avoided at all costs. On the other hand it may well be necessary to make allowances for the likely optimism of a manager's estimates, if experience shows that this is advisable and realism

n this context it does not constitute padding. Conversely, where it is suspected that contingency time has been added, estimates should be carefully assessed to weigh the possibilities of the contingency occurring.

Available float and the critical path can be done manually with most budget networks but large networks will require computer analysis, as analysis will not only be difficult but tedious also.

Allocation of Resources: The juxtaposition of available resources with the network will be the last process in its construction since it is independent of all previous stages. Up to this point, the network has been constructed (in a vacuum) in terms of available resources, with the implicit but unwarranted assumption that resources are available at all times. Certain resources can indeed be expended by temporary expedients, but an executive required at two places simultaneously provides an example of a resource which cannot, by definition, be expended. To see where clashes of resources are likely to occur or will inevitably occur, a calendar must be constructed with activities along the critical path schedule backward from completion to commencement date. All other activities can then be sheduled according to the resources available.

Two possible difficulties in resource allocation may arise. (1) resources may not be available when required within the network and (2) resources may be required for two activities simultaneously. When such a clash occurs, use of available float may be sufficient to match the activity with available resources. When no float is available or when resources simply cannot be provided for an activity, then the whole network must be moved backwards or forwards.

Practical Application: Three general points of practical application should first be considered.

i) **Preliminary Work** —The time required for budget compilation will inevitably vary so widely that no relevant representative figure can be given. As with any planning method, there is an optimum point where the time spent on preliminary work must be balanced against the assumption required to sustain it. The greater the preliminary work, the greater the area of assumption and the greater the risk that the assumptions may not be warranted.

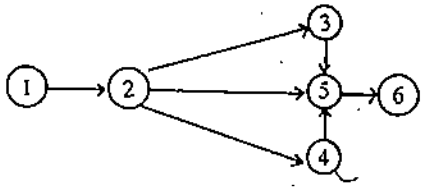
   Initial work on the network can start at any time after the completion of the last cycle but as the majority of the deadlines will depend on the assurances given by the contributors, final arrangements should be confirmed as near as possible to the starting date. Taking working days as the unit of measurement, a conservative estimate for normal budgeting span should have adequate calculation time.

ii) **Constructing the Network** — the first step would be:

	1 ——————·2
Where event	1 is 'commence budget'
	2 is 'finish budget'
and activity	1-2 is 'budgeting activity'

Three or four stages later, the network might have become:

Where events are:
1) Commence sales budgeting
2) Finish sales budgeting
3) Finish preliminary factory budget
4) Finish preliminary materials budget
5) Finish all budgets
6) Finish budget approval meeting.



and activities are:

1-2 Sales budgeting
2-3 Preliminary factory budgeting
3-5 Final factory budgeting
2-4 Preliminary material budgeting
2-5 Overhead budgeting
4-5 Final material budgeting
5-6 Correlation of budgets & Compiling of budget.

The linearity continues until the network has achieved sufficient detail to satisfy the necessary control and planning criteria.

Timing and Dating: Collaboration and co-operation by those who provide estimates are the key to successful network timing. Self-induced rather than dictated estimates provide not only realism, but an implied commitment to the deadlines. Conversely, the reactions of those who have been barely consulted are likely to be one of profound in difference to the priority of the budget or other work.

After timings have been agreed, dates can be given to each event and activity by working backwards from completion deadline in accordance with the principle described below for slotting the events and activities into the networks calendar.

Events and activities of the critical path are first written in the float of the other activities and then are to slot in each event and activity to ensure that the deadlines can, in fact, be met by matching the time and available resources.

Planning Changes: Inherent in any attempt to formulate a plan with a consid degree of unpredictability are the difficulties which are likely to arise out of chan that plan. Network completion as one of the varieties of activity planning is no exception. Since the object of using the network method is to reduce the serious consequences as well as the sources of likely unpredictability, the problem must not be glossed over.

The element of uncertainty built into budgeting arises from the possibilities of scheduling changes during compilation. These changes can come about:

a) as a result of a dynamic business situation, where a major change occurs during compilation.

b) as a result of changes in managerial assumptions.

c) as a result of the rejections of figures presented at one of the intermediate or final meetings.

No matter which ever budgeting planning technique is used, the consequences which follow major changes in assumptions apply in circumstances (a) and (b) with equal force. Since the circumstances are by definition unforeseeable, no defence of this specific method on this count is therefore applicable and the extent of the necessary revision will wholly depend on the extent of the changes in assumptions.

It might be thought that the answer would be to build in sufficient time for revision at each possible stage of rejection, but this may be quite inappropriate because the nature of the revision necessary cannot be predicted, and also because the scheduling would then be so loose as to render useless the method as whole. Two possible solutions are:

1) The initial use of PERT analysis, or

2) The use of circular network for each possible revision stage.

Programming: A daily progress chart relating the planned dated network to actual performance will be an excellent means of control and, to ensure that all relevant personnel are aware of the progress involved, the network calendar might well be prominently displayed in the management accountant's office.

Activity 4

Recapitulate in your words your understanding about budgeting with 'network' analysis, pointing out its merits and difficulties that you may have to face in implementing the concept.

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7.9 PERFORMANCE BUDGETING

i) **The Impetus:** We shall consider performance budgeting (PB) as being identical with programme budgeting or planning programming and budgeting systems, (PPBS) – to begin with. The origin of performance budgeting (PB) can be found in government fiscal budgeting. Traditionally, fiscal budgeting has implied the production of input budgets in terms of objects of items of expenditure for each fiscal year. The mechanism followed has been to examine either the preceeding year's budget allocations for various heads, or, at the most the actuals upto, say, nine months of the current period, and to make estimated percentage adjustments (upwards or downwards) to these amounts. The resulting figures constitutes the following year's budget.

A shift in thinking, however, began to emerge in government budgeting, beginning in the United States in the 1950s. Its use was particularly evident in that country in the area of defence budgeting in the 1960s. It was realised that since the great depression of the thirties, the government or public spending had been assuming increasingly larger proportions. This concern led to the seeking of ways and means of linking outputs to inputs. Such linkage were however, more difficult to establish in the sphere of management of government activities. For, unlike in industrial activities, where production or services could be provided at a price against a cost and where there was an automatic mechanism for input output balancing, a large measure of government activity did not possess this feature. PB is an attempt in the direction of facilitating this output-input integration, although one realises that the same degree of direct and tangible matching as is possible in industry may perhaps never be attained for government activities.

Thus, the switch to output-oriented budgeting, from input budgeting, is the key to PB. Performace implies results or outputs. These terms should, of course, be used in a broad sense. They should include any identifiable, measurable consequences of a series of activities and expenditures. Thus, even if tangible goods are not sold, nor services supplied for a price, it should still be possible to discover alternative standards of accomplishment. In fact, we may say that PB is an alternative to normal industrial budgeting in non-industrial institutions.

ii) **Terminology and Critical Elements of PB:** In India, PB was first heard in 1954 during the Lok Sabha debates. In spite of some concern being shown off and on since then, it was only in 1961 that the central government issued general orders drawing the attention of the administrative ministries to the recommendations of the Estimates Committees and requested them to consider the issuance of suitable instructions. Even thereafter nothing substantial happened. It was left to the Administrative Reforms Commission (ARC) to come out with more elaborate emphasis on PB in 1967. According to its Report, the following steps are the basic ones in PB:

a) establishing a meaningful functional programme and activity classification of government operations.

b) bringing the system of accounting and financial management in accord with this classification; and

c) evolving suitable norms, yardsticks, work units of performance and unit costs, wherever possible under each programme and activity for their reporting and evaluation.

In the opinion of ARC, the following results will be served by PB through the above-mentioned steps:

1) correlation of the physical and financial aspects of every programme or activity;
2) improvement in budget formulation, review and decision making at all levels of management in the government machinery;
3) facilitation of better appreciation and review by the legislature;
4) more effective performiance audit;
5) measurement of progress towards long-term objectives as envisaged in the plan; and
6) annual budgets and developmental plans being closely brought together through a common language.

It is clear from the above-mentioned lists of steps and objectives of PB that the measurement of government activities in terms of outputs is the chief concern of PB. Obviously, such a system should lead to more effective decision-making and evaluation.

As to the terminology used in the application of PB, the practice seems to vary. The Report of the ARC referred to earlier uses the following terms in an integrated sequence:

Function → Programme → Activity → Project

This is illustrated by taking the example of education, which is a function. Elementary education is a programme, training of elementary school teachers is an activity and erecting a school building is a project. Similarly, in an Institute of Management, research is a function, applied industrial research is a programme, training of field investigators is an activity and the writing of a book based on research data is a project. Some use the expression objective for which programme will have to be evolved. 'Function' and 'objective' thus seems to have been used in the same sense. In any case, whether it is function or objective, the criterion is that it should signify an output area — which may not necessarily be expressed in quantified terms. Quantifiability and measurability should not be regarded as synonymous. Yardsticks for assessment in qualitative areas can also be derived.

iii) **Conclusion:** It should be noted that the way in which PB has been discussed here differentiates it from programme budgeting or planning programming and budgeting system (PPBS). Thus, programme budgeting is essentially long-range in character, with periods spanning nothing less than five years. Moreover, PPBS should reckon with both costs and benefits of each programme and extend it to social criteria as well. The development of PB in India, however, seems to indicate that it is neither long-range in character, nor does it attempt a monetary cost-benefit matching (social or otherwise) of various programmes. In respect of time, it is essentially a replacement of traditional annual fiscal budgeting by a more output oriented, but still an annual exercise. As to cost-benefits evaluation, only direct costs are budgeted for and benefits are projected where possible — in direct physical terms only.

iv) **Important Features**

a) That objective-wise or function-wise budgeting in government is almost always likely to cut across departmental boundaries. In planning and budgeting for such programmes inter-departmental cross-walks become indispensable.

b) Budgeting should start with the main output areas, or end-result points. Objectivewise budgets should flow in the second stage from such budgets.

c) Physical accomplishments should be budgeted for and comparisons with actual achievements made.

d) A constant search for meaningful, measurable assessment criteria, even for apparently non-quantifiable areas, should be made.

e) The underlying logic of PB is fairly universal. It can, therefore, be easily adapted to help budgeting and review in institutions like universities, hospitals, charitable trusts, clubs and so on.

PB is ideally suitable in the following cases:

a) Government departments/organisations engaged in creation of infrastructure or rendering services (e.g. Health Ministry, Education Ministry, Income Tax department etc.),

b) Departments (in any enterprise) which do not produce any output (stores, maintenance, accounts and finance),

c) Capital expenditure monitoring (PB is dovetailed with conventional budgeting system for maximum benefits).

PB may be used even for commercial operations and this may lend additional sharpness in a units' control system, though it may not bring about a sea-change.

7.10 ZERO BASE BUDGETING

What it is

Peter A Phyre, who introduced Zero Base Budgeting (ZBB) in Texas Instruments, defines it as follows "An operating and budgeting process which requires each manager to justify his entire budget request in detail from scratch (hence zero base) and shifts the burden of proof to each manager to justify why he should spend any money at all. This approach requires that all activities be identified in decision packages which will be evaluated by systematic analysis and ranked in order of importance"

ZBB therefore, starts with a basic premise that the budget for the next period is zero and puts the onus on each manager to justify why the money should be spent at all and what would happen if the proposed activity is not carried out and no money is spent. ZBB presupposes that each manager has to undertake a cost benefit analysis for each of the activities under his jurisdiction, that are proposed to be taken up in the budget year.

Under conventional budgeting system, budgets are generally arrived at after adding some factors or percentages to the immediate past year's actual figures of costs and revenues. Sometimes, for revenues somewhat detailed exercise is carried out but as regards costs, extrapolation of the past figures tends to be the most common method. Thus, there is a lack of objectivity and perhaps a scope for perpetuating inefficiencies in matters of incurrence of costs that might already have been there in the past. It is this context that ZBB is a marked departure from the conventional budgeting technique.

ZBB is of course not an absolutely new budgeting system. The approach is, by and large, adopted when an enterprise formulates its first budget or a set of budgets immediately after a thorough reorganisation and regrouping of its activities. However, barring such experiences for brief periods only, most of the firms continue to frame their budgets on the conventional incremental budgeting method.

ZBB as a budgeting technique has been fortunate in getting the patronage of no less a person than Jimmy Carter, even while he was the Governor of Georgia. After becoming the President of U.S.A., he made the use of ZBB obligatory throughout the Federal Government in the fiscal year 1979. The most prolific writer on the subject is, however, Peter A Phyre and the concept owes much to him for the underlying methodology and also its practices.

The Methodology and Steps

Jimmy Carter, who introduced ZBB for resources allocation and control in government explains, "In ZBB, the budget is broken into units called decision packages which are prepared by managers at each level ..... These packages include an analysis of purpose, cost, measures of performance and benefits, alternative courses of action and consequences of not performing the activity. Then all packages are to be ranked in order of priority. After several discussions between department heads and the chief executive, the rankings are finalised, and packages upto the level of affordability are approved and funded."

In more specific terms the ZBB methodology as well as the sequential stages in its introduction may be outlined as follows:

a) **Defining the Decision Units (DU's)** A DU is a tangible activity or group of activities for which a single manager has the responsibility for its successful performance. The DU concept is akin to that of the responsibility centre. A traditional cost centre, a group of people or even a project may be a DU.

b) **Defining objectives of each DU** in clear and specific terms and in conformity with the enterprise objectives and goals.

c) **Identifying activities in the form of Decision Packages (DP's)** for any given activity there may be several alternative DP's, each describing a different level of effort and cost-benefit relationship. There are two types of DP's — mutually exclusive packages and incremental packages.

d) **Ranking of alternative DP's** in order of decreasing benefit to the organisation, using cost benefit analysis technique. Large volume of decision packages is expected in zero base budgeting in the early years. We can overcome this problem with

computer routines. Alternatively, this problem can be reduced by concentrating on marginal priority packages (see category 2 below). This is because ultimately all the packages presented for funding generally would fall into three categories:

i) those with a high priority and high probability of funding;
ii) those with a marginal priority and which may be funded or not funded depending on the resources available;
iii) those with a low priority and low probability of funding.

Those decision packages in category two warrant the greatest scrutiny over the others. Superior officers could profitably allocate their time for this.

c) **Forwarding the ranked DP's** to the next higher organisational units, for review, merger with other comparable DP's and for reranking. As the DP's are consolidated and reranked, the perspectives and objectives are broadened. The consolidation and reranking should preferably be done by a committee comprising all managers whose DP's are being considered and a chairman selected from the next higher organisational level.

f) **Finalisation of budget** proposed as well as preparation of budgets for each DU. These have to be finally approved by the top management. Before according approval, the top management will be guided by benefit cost ratios in allocating resources and the question of affordability.

Benefits and Uses:

Introduced in proper perspective and in a systematic manner, ZBB can benefit in different ways, as follows.

- ZBB fosters a culture of efficiency and cost effectiveness and for that matter, inculcates cost consciousness among managers.
- ZBB allows for quick budget adjustments during the periods when revenues fluctuate widely.
- ZBB improves budgeting process by focusing on objectives, priorities and needs.
- ZBB will provide an objective basis to prune or Zero-out programmes that have outlived their utility and expand high-impact programmes.
- Effective ZBB demands that there be no dichotomy between planning and budgeting. The two functions are interrelated and interdependent.
- Responsibility accounting system can become more effective under ZBB.
- Allocation of resources are made according to needs and the benefits derived.
- ZBB ensures participation from all concerned and facilitates coordination in planning and control.
- Lastly, and most importantly, an organisation can even benefit from the ZBB process itself, even if the system is not formalised — the exercise is creative and therefore, challenging and of course rewarding.

The US experience with ZBB generally reveals that ZBB has not resulted in major budget cuts but it has, in nearly every case, stimulated the redirection of resources from less productive to more productive activities.

Limitations and Problems

There are several success factors of ZBB — organisational, attitudinal and operational — that are not so easy to obtain, particularly in Indian organisations. Some of these success factors are:

- Top managements' personal involvement and commitment.
- Creative energies of the managers involved, in order to identify innovative DP's and also rank the alternatives.
- A wholly new mental attitude and management style throughout the organisation.
- Climate of trust and mutual confidence between the top management and the operating managements.
- A climate of delegation.
- Adequate feedback to the managers about reasons for their DP's being accepted or rejected.

ZBB also presumes the availability within the organisation of skills in cost accounting, cost analysis and performance measurement. Systematic use, in particular of the

technique of Cost Benefit Analysis and Cost Effectiveness is the bedrock of ZBB All these requirements can pose a lot of problems.

There is a greater amount of paper work associated with ZBB system than with conventional system, particularly during the initial periods of its introduction in an organisation. There are also problems associated with orientation training, developing operational infrastructure for ZBB itself, etc.

The process of preparing budget proposals has so far been largely ritualistic. In addition to this, the multiple levels of decision making, labyrinthine procedures, poorly developed methods of communication, information and retrieval of data, erratic transfers of key officials, are some other organisational deficiencies which are likely to pose serious problems in the successful implementation of ZBB in India, particularly in government departments.

Sometime back the Union Finance Minister announced that ZBB would be introduced in India in a small way in 1986/87 and in-full in budget formulation from 1987/88. As back as in the year 1968/69, the Government of India had decided to switch over to Performance Budgeting. But till date, one fails to see the impact of the switch. The recent intention of the government to switch over now to ZBB is not clear, particularly because the prospects and problems of ZBB system in the Indian context are yet to be explored and appreciated in proper perspective.

Budgeting for any activity has two dimensions, inputs and outputs. Where the relationship between the inputs and outputs can be determined, standards can be set and deviations of the actuals from those standards measured. The costs associated with the inputs cannot be specified and quantified, then other means of control must be used. It is in this area where ZBB tends to be effective. Performance Budgeting (PB) is also meant for similar purpose where outputs are not financially quantifiable. The main difference between these two concepts (leaving aside the methodology part) is that while PB emphasises the performance part i.e. the outputs of the budgeting system ZBB places greater emphasis on the cost part i.e. the inputs in the budgeting system under an identical situation.

Illustration

The final accounts of XYZ Ltd. is as under:

Profit & Loss Account for the year ended 31.3.1989

		(Rs '000s)
Income: Sales		126.0
Expenses:		
Materials		
Wages		36.0
Manufacturing		12.0
overheads:		
Variable	4.2	
Fixed	3.0	
Depreciation	3.0	10.2
Administrative overheads		4.0
Selling & Dist. overhead		
Variable	6.0	
Fixed	2.0	8.0
Total		70.2
Net Profit	55.8	
Income Tax	23.0	
Dividend	12.0	
Total	35.0	
Balance transferred	20.8	

Balance Sheet as at 31-3-1989

			(Rs '000s)
Proprietor's Fund:			
Share Capital			200.0
Reserve			19.0
			219.00
Fixed Assets:			
Gross Block		250.0	
Less: Dep.		50.0	200.0
Current Assets:			
Inventory		20	
Debtors		29	
Cash		25	
		74	
Less: Creditors	20		
Provision	35	55	
			19.0
			219.0

i)

	(1988-89)	(1989-90)
Capacity utilisation	60%	80%
Units produced	60,000	
Sales Price/Unit	Rs 2.10	Rs. 2/30
		25% price increase in material expected
		10% increase in wage rates expected

Manufacturing overhead		10% increase in cost expected
Administrative overhead		5% increase in cost expected
Selling & Distribution overhead		10% increase in cost expected
Capital Expenditure	Rs. 60,000	
Depreciation	Rs. 3,000	
Income Tax	Rs. 50,000	
Dividend	Rs. 20,000	

ii) Period Allowed:
Debtors: One month
Creditors: Two months
Stock of raw materials: 3 months requirement from 89-90
Time lag in wage payment is insignificant.

iii) There is no stock of finished goods in the year ending 89-90

iv) Opening stock of material in 88-89 is Rs. 20,000

Let us now attempt the answer.

Sales Budget

$$\text{Units} = \frac{80}{60} \times 60000 = 80000 \text{ @ } 2/30$$

Sales Value = Rs. 1,84,000

With the help of the following information we will prepare forecasted Profit & Loss Account and Balance Sheet as on 31.3.90:

Purchase Budget (Materials)	(Rs. 000)
Consumption in 88-89	36
Add 33-1/3% increase in capacity	12
	48
Add 3 months stock holding	12
	60
Less Opening Stock	20
	40
Price increase @ 25%	10
Requirement	50
Consumption During 89-90	
Opening Stock	20
Add Purchase	50
	70
Less Closing Stock $12000 \times \frac{125}{100}$	15
	55
Wages Budget:	
Wages paid in 88-89	12.0
Add 33-1/3% for Capacity increase	4.0
	16.0
Add 10% rate increase	1.6
	17.6
Overheads budget	
Manufacturing Overheads	
Variable Expenses	4.2
Add 33-1/3% volume increase	1.4
	5.6
Add 10% Cost increase (Say)	0.6
	6.2
Fixed Expense	3.0
Add 10% Cost increase	0.3
	3.3

Depreciation		3.0
Administrative O.H.		
Expenditure in 1988-89		4.0
Add 5% Cost increase		0.2
		4.2
Selling & Distributing O.H.		
Variable Expense		6.0
Add 33-1/3% volume increase		2.0
		8.0
Add 10% Cost increase		0.8
		8.8
Fixed Expense		2.0
Add 10% Cost increase		0.2
		2.2

Cash Budget

Receipts

	(Rs. '000)	(Rs. '000)
Opening balance		25.0
Debtors (Sales)		
Opening	29.0	
Sales	184.0	
Less Closing balance		
(Say 1/12 of 184.0)	15.3	197.7
		222.7

Payments

Creditors (Purchase)		
Opening	20.0	
Purchase	50.0	
Less Closing Say 2/12×50)	8.3	61.7
Wages		17.6
Overheads		
Manufacturing	9.5	
Administrative	4.2	
Selling & Dist.	11.0	
		24.7
Income Tax		23.0
Dividend		12.0
Capital expenditure		60
		199.0
Closing Balance		23.7

Forecasted Profit & Loss Account

	(Rs. '000)	(Rs. '000)
Income		
Sales		184.0
Expenditure		
Materials	55.0	
Wages	17.6	
Manufacturing	12.5	
Administrative	4.2	
Selling & Dist.	11.0	
		100.3
Net Profit		83.7
Income Tax		50.0
Dividend		20.0
Balance		13.7

Forecasted Balance Sheet

		(Rs. '000)	(Rs. '000)
Share Capital			200.0
Reserve			32.7
			232.7
Fixed Assets			
Gross		310	
Less Dep.		53	
			257.0
Current Assets			
Inventories		15.0	
Debtors		15.3	
Cash		23.7	
		54.0	
Less			
Creditors	8.3		
Provision	70.0	78.3	(24.3)
			232.7

Activity 5

a) Are any of the ideas implied in the concepts of Performance Budgeting and Zero Based Budgeting being used in your organisation? State in what ways you think your organisation is close to or away from the central ideas of any of these techniques.

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.....

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.....

b) Describe the steps/additional steps that you would take to bring your organisation close to the ideas implied in Performance Budgeting and Zero Based Budgeting.

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7.11 SUMMARY

In any management control system, control is exercised in the context of what should be happening. The 'what' of control is provided through a conscious planning process, adequately detailed and structured to identify the various actions having two axes: (a) physical, (b) financial. While the translation of actions into physical terms is called programming, that in financial terms is called budgeting. Programmes/Budgets may be classified into different types and looked at from different points. Very often a judicious combination of some or all of the classifications is attempted to obtain desired results.

In the process of budget setting there are certain important issues which need to be examined or sorted out before starting the detailed budget setting exercise. Preparing more-or-less a rigid plan on one set of condition and generally on one level of activity is called fixed budget. But due to tremendous uncertainties or turbulence in the environment, it is difficult to prepare a reasonably good forecast, an attempt should be made to develop several alternatives, showing alternative levels of utilisation of resources. This implies developing multiple or flexible budgets.

The process of traditional budget preparation consists of the detailing of different departmental or operational data e.g., manufacturing, administrative, marketing budgets etc. To avoid the difficulties that might arise in compilation of yearly budget in time or to fulfil requirements of meeting the budget deadlines, net work analysis can be used successfully.

The sphere of management of government activities, unlike industrial activities, does not possess an automatic mechanism for input-output balancing by providing a price against cost. Performance Budgeting (PB) facilitates the integration of the output-input relationship. In fact, PB is an alternative to normal industrial budgeting for non-industrial institutions by switching to output-oriented budgeting from input-oriented budgeting.

The concept of Zero Base Budgeting (ZBB) is considered as a suitable alternative to replace the traditional method of budgeting. It avoids the serious shortcomings of traditional budgeting and helps in coping with the constantly changing environment.

7.12 SELF-ASSESSMENT QUESTIONS/EXERCISES

1 Outline the steps necessary for preparing a detailed man-power estimate which would be of value in preparing labour budget.

Compile a manpower estimate for a production department showing the break-down in terms of cost centres of various grades of labour required.

2 Manufacturing company is preparing its operating budgets for the year commencing 1st January 1991. For a particular department, it is estimated that a total of 48,000 hrs. of standard output will be required. The company operates on a 13×4 weekly control cycle and the spread of production in the year is as under:

Period	Std. Hrs. of production as a % of the annual total
1	7.2
2	7.4
3	7.9
4	7.2
5	7.7
6	7.8
7	7.3
8	8.4
9	8.5
10	8.8
11	7.2
12	7.6
13	7.0

This department produces an average of 0.8 standard hours of output for each attended hour; the balance of time is lost through production delays.

Paid absence on account of holidays and sickness is expected to occur on the following scale:

Periods	% paid absence
1, 8, 9 and 10	10
2, 3, 4, 12 and 13	15
5, 6, 7 and 11	20

The basic week is 40 hours and the forecast wage rate is Rs. 12/- per hour. Overtime is paid at one and one-half time but, by a trade-union agreement, must not exceed 10% of the basic paid hours in any period. All non-productive hours are paid at the flat rate as operatives are expected to undertake clean-up work at these times. Employee benefits and insurance contribution amount to Rs. 60/- per week per employee.
You are required:

a) to prepare a manpower budget for the year on the basis of maintaining a static labour force throughout and using overtime within the agreed limitations, so as to minimise total labour costs.

b) to evaluate separately the following proposals and make a recommendation including the impact on budget:

   i) to initiate a safety campaign costing Rs. 10,000/- to reduce accidents and thereby reduce the paid absence given above from 10%, 15% and 20% to 9%, 14% and 19% respectively.

   ii) to undertake additional preventive maintenance at a cost of Rs. 25,000 to reduce machine break downs and thereby eliminate 25% of the time lost through production delays.

3 It is sometimes argued that the flexible budgetary control approach to cost control within production departments is obsolete. The main arguments seem to be that:

a) Production costs are tending to become more and more fixed policy costs, outside the control of the department manager.

b) Because of (a), there is no point in flexing the cost budgets for ultimate comparison with actual costs and that this is a meaningless and wasteful exercise.

c) This mechanistic form of control requires the involvement of managers in the setting of budgets and this they can rarely do because of the absence of the necessary standard data.

Discuss these points separately and appraise the general argument.

4 One of the problems in setting budgets is matching the forecasted demand with the estimated available capacity.

a) Why is this so?
b) Explain why capacity is difficult to estimate.
c) Detail the options available when undertaking the matching process.

5 What are the advantages of a Plant and Equipment Budget? What factors will you take into account in including an item in the Plant & Equipment Budget?

6 What are the objects of drawing up a capital expenditure budget? When funds available for capital expansion are limited what order of priority will you recommend for including capital expenditure proposals in the budget?

7 Explain the factors to be taken into account when assessing risk taking decision on capital expenditure projects. Draw distinctions in your answer between those of:
a) a new product for a new market
b) an existing product for an existing market
c) a plant replacement.

8 It is frequently argued that planning and control of capital spending is much more rigorous than planning and control of revenue expenditure. There is evidence which shows that it is so. As a result, profitability and cash flow problems arise.
Taking an example of an organisation of your own choice, describe what you consider would be effective planning and control arrangements for the main elements of revenue expenditure.

9 A company selling a standard product learns that its raw materials supplier is about to close because of recession. An alternative supplier cannot start delivery until January 19X9.

The course of action that the company is considering is to buy from the present supplier enough extra raw materials to enable it either:

1 To sell the normal monthly level from January to March 19X9; or

2 To sell at 70% of the normal monthly level from January to March 19X9.

The following conditions apply to both courses 1 and 2:

i) Stocks of raw materials and finished goods at the beginning of April 19X9 must be at the same level in quantity terms as the monthly sales of the preceeding three-month period.

ii) Payment for the extra raw materials bought must be made in January 19X9.

iii) Extra storage space will need to be rented for the period. This will cost Rs. 3,000 per month for course and Rs. 1,000 per month for course 2.

iv) Stocks in excess of Rs. 1,02,000 deteriorate and the costs of rectifications are:
2% of the excess for the first month
4% of the excess for the second month.

v) Interest on bank overdraft is to be calculated at 24% per annum on the closing monthly overdraft balance (before interest) and charged as occured in the same month.

vi) Production required should be split equally among the three months.

Budgeted Profit and Loss Account for normal monthly activity (i.e. a sales level of Rs. 1,00,000 per month) is shown in Appendix A.

Budgeted Balance Sheet as at 31.12.19X8 is shown in Appendix B. Other relevant data are:

- Sales during Nov. 19X8 and Dec. 19X8 were Rs. 80,000 and Rs. 90,0000 respectively
- Debtors pay 30% of invoice values in the month following that in which sales are made and the remaining 70% in the second month following that in which sales are made.
- Fixed production overhead is absorbed into finished goods.
- Direct wages are paid in the months in which they are incurred. Overhead is paid one month after it is incurred.

- Assume that selling prices are constant over the period.
- Taxation may be ignored.

You are required to:

a) Prepare monthly cash forecasts and Profit & Loss Account for the period from 1.1.19X9 to 31.3.19X9 for the company for (i) Course 1 and course 2

b) Prepare a balance sheet as at 31.3.19X9 for course 1

c) Indicate briefly the circumstances in which the Company might choose each course of action.

Appendix A

Budgeted Profit & Loss Account for normal monthly activities:

	Rs. '000s	Rs. '000s	Rs. '000s
Sales 1,00,000 units @ Rs. 1			100
Cost of Sales			
Production Costs:			
Direct Materials	26		
Direct Wages	30		
Fixed Production overheads (a)	20	76	
Selling and Administrative overheads			
Fixed (b)		15	91
Profit before Tax			9

Notes : (a) Includes Rs. 6,000/- depreciation =9000 as against 15,000
(b) Includes Rs. 3,000/- depreciation.

Appendix B

Budgeted Balance Sheet as at 31.12.19X8

	Rs. '000s	Rs. '000s		Rs. '000s
Fixed Assets				
Plant & Machinery (at cost)		580		
Less Accumulated Depreciation		150		430
Current Assets				
Stock : Raw Materials		26		
Finished goods		76	102	
Debtors			146	248
				678
Issued Capital		500		
Profit & Loss Account		98		598
Current Liabilities				
Creditors for goods		23.4		
Creditors for expenses		26		
Dividend due (Jan. 1989)		18.6		
Bank overdraft		12		80
				678

10 The newspaper industry works under conditions which are vastly different from especially from the point of view of preparation of budget. Mention the conditions and keeping them in view, draw up the skeleton of a budget for a newspaper having a daily circulation of 60,000 copies.

11 As a divisional manager of a business, you have been asked to change your approach to budget preparation, from traditional incremental approach to Zero base approach. Your argument that this change should be gradual.
a) Why do you argue this way?
b) What is zero base budgeting?
c) What do you see as the likely merits and demerits of ZBB?

12 What are the uses and requirements of Sales forecasting. Discuss some of the basic issues which are to be sorted out before developing marketing budgets. Explain also the mode of integration between annual marketing budgets and marketing long range Planning.

7.13 FURTHER READINGS

Batty, J – *Corporate Planning & Budgetary Control* (M & C)

ICMA (UK) 1968: *An Introduction to Budgetary Control, Standard Costing, Material Control and Production Control.*

Merewitz Leonard, & Stephen N. Sosmick – *The Budgets' New Cloths A Critique of PPB and Benefit – Cost Analysis* – Markham Publishing Co. Chicago.

Thomas, William E., 1970:*Readings in Cost Accounting, Budgeting and Control* – Taraporevala.

UNIT 8 ANALYSING AND REPORTING

Objectives

The objectives of this unit are to acquaint you with the:
- Anatomy of Management Reporting System (MRS)
- Concept of Management Information System (MIS)
- Presentation of an Integrated Approach

Structure

8.1 INTRODUCTION

The principle purpose of reporting is to provide communication periodically concerning the efficiency and effectiveness of current activities vis-a-vis the programmed, planned or budgeted ones. Thus, there should be a sound system to (i) provide timely information to managers about the relative success of the activities and (ii) identify operational problems in executing them. Thus, from the point of control, this phase embraces two distinct areas:
- Analysing the happenings, and
- Reporting decision making.

8.2 MEANING AND SIGNIFICANCE OF A REPORT

A report is nothing but a container of information. A report may be defined as a carefully structured written document through which factual information or expert opinion is transmitted and on which executives base their future plans and decisions. Some reports are sent regularly at specific time intervals, some other reports are mostly of a one-time nature, dealing with a specified problem or a specific project. All reports are intended to aid management in decision making and also in controlling. Reports are meant to present carefully organised facts and figures with recommendations to the decision-maker and to the person charged with controlling the operations. The success of a good report should be judged by its results i.e., the extent to which it can help in decision-making and controlling the operations.

8.3 DIFFERENT TYPES OF REPORTS

There are five different types of reports, briefly discussed here.

i) **Periodic Report:** This covers the activities in a particular area for a given period of time (a week, a month, a quarter or even a year). This report records essential data

in historical form and in a regular manner.

ii) **Progress Report:** This shows the progress made during the period covered. A good example is the annual corporate report. The progress reports provide the necessary data for comparison.

iii) **Examination Report:** This is also called investigation report since it analyses past and present conditions, under a suitable programme of study and investigation to establish some basis for later recommendations. While the periodic report records known data, investigation report collects and records essential data, not previously known and analyses these data to arrive at definite conclusions.

iv) **Recommendation Report:** This is an examination report, the results of which lead to specific recommendations. It may be persuasive in nature, argumentative in purpose and may also urge a definite programme in action.

v) **Statistical Report:** Just as people use words, they also need figures in their day-to-day activities. A statistical report presents such figures in a systematic manner. Basically statistics is a kind of shorthand, a stenographic shortcut method of presenting a mass of facts of a strictly numerical nature. When the bulk of a report presents statistical material such as mathematical charts, tabular columns of figures, financial data, etc. with a relatively brief interpresentation of their significance, it is called a statistical report.

8.4 REPORT PREPARATION

The technique of preparing reports consist of two basic operations:

i) The arrangement of thoughts in a clearly organised pattern; and

ii) The translation of the thoughts through the medium of words, sentences and paragraphs and also some data.

The following points are relevant in the operation of arrangement of thoughts or developing the material:
a) limiting the topic (a vast of unlimited topic is too unwieldy to handle);
b) assembling the material;
c) organising the material;
d) providing summaries, briefs and digests.

The second and more important aspect, that of presentation of thoughts, should take into consideration the following points:

- **Length:** The shorter a report, the better.
- **Paragraphs:** Each paragraph should deal with one specific point and all the paragraphs should be logically linked up — one necessarily leading to the other;
- **Style:** Use short sentences, present facts and opinions in a short but precise manner;
- **Assumptions:** These should be neatly stated, precisely and separately;
- **Figures and data:** These should be presented in a tabular form preferably in annexures at the end of the report. But the more important ones (usually the resulting data) should be made use of in the main body of the report;
- **Jargon:** All technical jargon should be avoided as far as possible since the readers may not understand these and, therefore, may become hostile to even the spirit of the report. It is to be noted that reporting is a form of effective written communication and if the reader has not understood it means that the writer has not reported well. Sometimes one is required to present a rather long report. The organisational framework of such a report should be somewhat as follows:

Organisational Outline for the Long Report

A) Introductory:
   i) Title page
   ii) Letter of transmittal
   iii) Table of Contents
   iv) List of tables, charts, illustrations (if any);
   v) Executive summary;

B) Body of the Report:
   vi) Textual content

C) Supplementary material:
- vii) Appendix (or reference section)
- viii) Bibliography
- ix) Index (if any)

Each section and paragraph should be suitably numbered using a two-or-three digit numbering system.

It is very common these days to use charts and diagrams in reports. A chart or a diagram can often convey facts and information which volumes of words cannot. Thus, it is often advantageous to use various charts and diagrams in a report to make it more telling.

The common charts and diagrams usually included in a report are:

i) **Line Graphs:** To show, for example, cumulative actual sales against budget and/or against previous year's actuals;

ii) **Bar Charts:** Generally used for showing comparison of month-wise sales and expenses – budgeted and actuals;

iii) **Pie Charts:** Commonly used to show in a circular diagram the distribution of the total sales revenue among costs, profits as also the total costs among the different constituent elements.

8.5 MEANING AND IMPLICATIONS OF MIS

Management Information System (MIS) has three components, Management, Information and System. Management essentially means planning and controlling operations, but such planning and controlling presupposes making decisions about planning and controlling. Information has to be distinguished from data. For example, customer's invoices are data only, while the inventory analysis, sales analysis etc., are information (after the same data are converted). System essentially implies a systems approach to turn data into information and integrate all systems of a business.

Thus, MIS may be defined as a set of integrated, well-knit and scientifically designed system whereby raw data get converted into decision-based and control-oriented information and (continuously and flow) regularly from one end to another. A sound MIS ensures *inter alia* the following:

- Right information at right time to right person and in right manner;
- Regularity in the periodicity of information flow;
- Information geared toward aiding managerial decisions for planning and control;
- Screening of all information at the point of transmission to select the relevant and reject all irrelevant details, keeping an eye on the diverse needs of management at different levels;
- A built-in system of link-up and follow-up.

There are three key elements in any information-flow, namely timing, degree of accuracy and nature of defects. Timing of information is perhaps of the greatest importance in any MIS since it is an accepted fact that information delayed is information denied. Closely linked with timing is the degree of accuracy which should be determined with reference to the purpose of the proposed information and the decision that might emanate from it. Nature of details or the volume of information is also an important factor in MIS. Inadequate information and more than adequate information may both be worse than no information.

What is information (finished product) to one may be data (raw materials) to another. It all depends upon the levels and functional areas of management. For example, a detailed customer-wise outstandings analysis is an information to the line management but only data to the top-management. From these data may be prepared division-wise working capital lock up in respect of outstandings and this may become an information to the top management.

The philosophy underlying the principle of costing should form the bedrock of MIS so that the desire for more and more information is tempered with a proper cost-benefit analysis. It is to be noted that information industry is the most expensive industry today. Some companies have started treating MIS function as a profit centre. This

would reduce the cost of information substantially since the MIS department will appropriately charge the user department in respect of all information provided.

Last but not the least, MIS should be more future-oriented than just an extrapolation of past data. Unfortunately, futuristic element is absent from more information today. Taking decisions based on past data alone is the same as driving a vehicle with eyes fixed on the rear view mirror — the vehicle can never achieve even reasonable speed and reach the destination in time.

8.6 NEED FOR MIS

The need for MIS is felt more in its absence than in its presence. Very often in an organisation some failure symptoms become apparent necessitating the introduction or revamping of MIS. Such failure symptoms could be:

i) Organisation being unable to meet its commitments;
ii) Increased overtime in respect of clerical and other staff;
iii) Huge backlogs in executive work load;
iv) Delayed decisions, indecisions and wrong decisions;
v) Non-availability of timely and relevant information;
vi) Maintenance of pocket and/or desk information;
vii) Loose control resulting in wastages, losses and inefficiencies;
viii) Duplication of work and disjointed efforts.

The increased incidence of heart ailments, ulcers, blood pressures etc., among today's executives may be largely ascribed to the absence of MIS which in turn generates more tensions at work. Similarly, inability of the executives to regularly avail themselves of annual leave or executives going for their own marriage with casual leave are also due to absence of proper MIS.

Activity 1

Describe the main features of MIS in your organisation. From the point of view of management control what reports the MIS unit in your organisational generates for managers at the:

a) supervisory level
b) middle level
c) top level

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8.7 A FEW MYTHS ABOUT MIS

One myth is that the study of management information system is about the use of computers. Another myth is that more data in reports mean more information for managers. Closely related to this is another myth that more frequent reporting means more useful information. It is also a myth that the accountant aims to keep the cost of information to the minimum. Almost similar is the myth that the accuracy in reporting is of vital importance.

One of the largest myths, particularly about MIS in Indian industry, is that the manager's information needs can be determined by professional system study. Line managers seldom do any home-work to identify their information needs and consequently depend heavily upon the MIS or systems man to do this job of theirs. Obviously good MIS cannot be evolved with this type of attitude of line managers. Staff managers in charge of MIS may at best assist them or even guide the line managers in identifying their information needs. But nothing more than that is either desirable or practicable.

The supreme myth about MIS is that, "we understand what management information is". Yes; we claim to understand. May be we understand the technical aspects involved.

But the managers hardly understand the human element and more particularly the decision process of an organisation and the interface between the MIS and such decision process. To prevent MIS from degenerating into a mechanical exercise, the understanding of human factor as also the decision process is vitally important both for the line managers and for the MIS staff.

8.8 MIS AND COMPUTERS

The following are the requirements of data processing under MIS:

i) Large volume;
ii) Provision for systematic storing of the data;
iii) Convenience of access to and easy retrieval of the data;
iv) Continuous up-dating of the data base;
v) Manipulation of the data according to fixed as well as variable decision rules,
vi) Processing the data in appropriate time-frame;
vii) Ensuring acceptable level of accuracy (arithmetical) and reliability (of inputs); and
viii) Processing data economically.

If we could meet all the above requirements or even most of them manually, through well-designed systems and procedures, then there is no need for computer in the area of MIS. In fact, it is so in the case of small or even medium-sized organisations. It is, therefore, to be noted that, contrary to the popular belief, computer is not synonymous with MIS. But it may be an ideal vehicle of MIS – ideal but not ultimate, nor indispensable. Even in large organisations Computer manual combination, based on suitable cost-benefit analysis may provide the right type of MIS and this is what should be attempted.

Activity 2

To what extent is the management control system in your organisation computer based? Explain briefly. What activities in the area of management control have recently been computerised and what benefits/difficulties it has brought about/created?

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8.9 MANAGEMENT AND INFORMATION SYSTEM

The first basic implication of a scientific information system for management is to replace traditional approach by systems approach. Let us examine what this really means. The traditional organisation structure, based on the span of control and specialisation concepts suffers from two basic limitations:

- It pays the job, not the man
- Communication problem arises because of bureaucratic entanglement
- many a decision is either hidden or lost in the morass of bureaucracy.

These problems can be effectively taken care of under the systems approach, where organisation is more a team than a pyramid.

The traditional control also suffers from a serious limitation in that it is more historical in nature. Often it is too late to do anything about it. Further, whatever control is there, it is more of an accounting control (through budgets) rater than managerial control. Under the systems approach control becomes really managerial control and not historical and accounting in nature.

Decision-making is required for planning and controlling operations. Decision, by definition, is a choice of two or more alternatives. Under traditional method, programmed decisions are based on procedures and the non-programmed ones, on

hunch, intuition and judgement. Under systems approach, both types of decisions will be based upon MIS. MIS by providing better information to the decision-maker ensures that he can take a better decision and can also check for himself continuously whether the decision-making process is being improved or not.

The starting point of planning under an integrated MIS effort should be profit planning. Table 8.1 is useful:

Table 8.1 Planning and Control Instruments

Elements	Plan	Control
Sales	Sales Plan	Sales quota
Cost of Sales		
Materials	Material Plan	Unit usage
Labour	Labour budget	Labour standards
Overheads	Overheads budget	Functional relationship between different items of activity
Selling and Distribution	Budget	- do -
General and Administrative expenses	Budget	- do -
Profit	Profit Plan	R.O.I

8.10 DESIGN AND IMPLEMENTATION OF MIS

The following are the different stages involved in the designing and implementation of MIS:

Identification of MIS need of Managers: As it has been made amply clear earlier, the managers must identify their information needs themselves. MIS oriented people can at best assist them in this task.

Examining the existing information flow: In the second stage, critical examination of the existing information flow is required in order to find out their adequacy or otherwise. All existing forms/reports may be scanned by using the following format:

		ORIGIN				DISTRIBUTION			
Sl. No.	Title of the form report	Periodicity	Deptt. (head).	Timing	Sources of data	Deptt. (head)	Timing	Usage	Remarks

Designing Draft MIS: Based on the above scanning and keeping the information need of the managers in view, a re-design of MIS can be made. In the process some of the existing forms of reporting may have to be eliminated, some modified and also some new formats may have to be designed.

Trial ballooning of the ideas: Through a workshop based on the draft design, a sharing of ideas should be made at this stage. There should be a sleeves-up chalk-board type of atmosphere. Participating members should have absolute freedom to present their thoughts and views in a frank and friendly atmosphere without any fear or favour to make correction or alteration of the draft MIS.

Giving a final shape to MIS: Based on the above additions/alterations a final shape to MIS could be given.

Trial Run: Based on the above final draft a trial run of the information flow can be made to examine its workability, mostly manually.

Computerisation: The next stage would be the computerisation of the systems to the extent feasible and desirable.

8.11 IMPACT OF MIS ON MANAGEMENT

The result of installation of a sound MIS is improved management. This benefit cannot be quantified in strict monetary terms, but the all pervasive impact may be felt quite well. For one thing, a sound MIS should explode the myth that a particular executive is indispensable. The first major impact of MIS on an organisation is that decisions are based on facts rather than on bureaucratic procedures and subjective factors. Secondly, MIS would flatten the universal pyramid structure of an organisation. In a typical pyramid organisation people run on hunch and history and get lost in the labyrinthine

intricacies of the bureaucratic system – the inevitable results are indecision or delayed decision and emphasis on procedures rather than on results, obsession with inputs rather than with outputs. In the new organisation brought about by MIS, they would base their decisions upon information. Thirdly, MIS would facilitate delegation, since the problem of what to delegate is effectively solved by MIS. According to the conventional principle of span of control too many people reporting to one man is considered to be bad. But the reporting of too many to one is what a sound MIS seeks to achieve. Lastly, MIS replaces 'management by activity' to 'management by results' and substitutes 'management by technocrats' by 'management by generalists' – generalists who can plan, organise and control any functional area, backed by sound MIS. To sum up, MIS improves a manager's responsibility by enlarging his job scope and result-orientation.

8.12 A SYSTEMATIC PRESENTATION OF AN INTEGRATED APPROACH

The integrated approach is presented in exhibit 8.1 for providing you a broad perspective of the entire gamut of management information, control and reporting systems (MICRS). The presentation being self-explanatory in nature, there is no need to add any further observations in this regard.

Exhibit – 8.1

An Integrated Framework of Management Information, Control & Reportings System (MICRS)

LEVELS IN THE ORGANISATION	Planning and Control Function				MIS for Planning and Control				
	Planning		Control			Nature of MIS		Nature of	Report
	Responsibility	Tools	Responsibility	Tools	Contents	Sources of Data	Uses	Format	Frequent
CORPORATE (TOP)	Strategic Planning	Corporate Planning and Strategy	Overall Control	i) Management by objectives (MBO) ii) Profit Centre System iii) Responsibility Accounting	1) Environmental and end-user information, Regulatory Policies and supply of inputs 2) Market share competitive and market trends 3) Aggregate Financial results for the organisation which highlight: i) Growth in sale ii) Product Gross Margin iii) Profit bef. & Aft. Tax. iv) Return on investment v) Receivables vi) Inventories vii) Liquidity	Qualitative Environmental data, Competitive data, Competitive data, Financial Accounting system	Overall Organisational performance analysis, Trend analysis, Identification of strategic & tactical shifts	Lesser Degree of Structuring	Monthly/ Quarterly/ Half-yearly
EXECUTIVE (MIDDLE)	Medium Range Business Plan	Budgeting	Management Control	i) Budgetary Control ii) Performance Budgeting iii) Zero Base Budgeting	1) Financial Performance: i) Order bookings ii) Capacity Utilisation iii) Sales, costs, margin, overhead, profit before tax (for each product group & region) iv) Working Capital-Inventories, Receivable, v) Cash Flows vi) Rejections & Complaints	Finance Accounting system, Production & Marketing records	Product Group & Regional performance analysis, Identification of remedial action for making up shortfall in targets, Identification of operational and functional policy changes	Structured	Fortnightly monthly

OPERATING (SUPERVISORY)	Short-Range Planning & day to day periods) scheduling	Budgets (broken down into short periods)	Operational Control	Productivity Techniques	1) Operational performance on each production unit and product line i) product quantity and value ii) capacity utilisation iii) inventory-raw material stores and supplies iv) productivity labour machine and overtime v) sales volume and price realisation vi) field efficiency vii) rejection 2) Financial information: production cost material supplies, labour, utilities marketing costs	Departmental operational records Cost Accounting system	Change in pricing and product mix product promotion decision Production scheduling change Technical adjustment and changes	Highly structured	Daily/ weekly/fort-nightly

Activity 3

An integrated framework of Management Information, Control and Reporting System (MICRS) has been presented in Exhibit 8.1 above. Sum up the main features of the framework in your own words.

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8.13 DECISION SUPPORT SYSTEM

It is both interesting and perhaps a bit intriguing to note that MIS is steadily being replaced by Decision Support System (DSS) in the advanced countries, particularly as a sequel to the recent computer revolution all over. This phenomenon reminds one of a similar situation when Data Processing of the 60s was replaced in the early 70s by MIS. Although a detailed discussion on DSS is outside the purview, it may be useful to mention here some important points of difference between MIS and DSS. First, DSS is entirely computer-based while MIS need not necessarily be so. Second, while MIS implies periodic reporting, DSS is an ongoing, online and interactive exercise with the use of computer terminals as and when needed. Thus reporting at regular periodic intervals is not involved. Third, under DSS, models with basic parameters are stored in the computer for each specific area involving decisions. And decision-maker at any point of time can change some variable(s) and get guidance from computer on the most optimum and feasible solution under the given set of circumstances or variables. In areas like inventory control, cash management, product-mix management, project analysis and implementation monitoring etc., DSS has been found to be highly effective. Obviously, MIS cannot provide this kind of flexibility as well as effectiveness mainly because a decision-maker has to wait for the information and might have to lose some opportunity during the waiting period due to right decision not being taken at the right time.

Information has two important roles in management-information for decision making and information for control. Information for decision making needs to be essentially futuristic in nature. Information for control, on the other hand, should be basically of the feed-back type, with some futuristic elements built into the same.

It is unfortunate that most of the enterprises in India, both in the public and the private sectors, are yet to appreciate the real potential of MIS, not to speak of DSS. Consequently, in India, MIS has by and large degenerated into not only an extension of the accounting systems but into mechanistic rituals and management reporting; in many cases a lack-lustre formality rather than an instrument to serve some specific decision-making purpose. It is, therefore, important that the top management as well as management at all levels should be oriented towards the real significance of MIS and how this can be designed and installed in an organisation effectively.

Change is the only unchanging thing in this changing world. The management information and reporting system once developed cannot serve the purpose and need for all time to come, particularly when situations change, as they do – sometimes wide and abruptly. Every MIS as well as reporting system should, therefore, contain some built-in flexibility in order to adopt to change from time to time.

8.14 SUMMARY

From the point of view of control, the purpose of reporting is to provide communication periodically concerning the efficiency and effectiveness of current happenings vis-a-vis programmed, planned budgeted, levels. Thus a report is basically a container of information. Some reports are sent at regular intervals and some others may be sent once only because of their one time nature. Reports are intended to aid management in decision making and also in controlling.

Management Information System (MIS) is a set of integrated well-knit and scientifically designed system whereby raw data get converted into decision-based and control-oriented information which continuously and regularly flows from one end to another. There are three key elements in any information-flow, viz. timing, degree of accuracy and nature of details.

The basic implication of a scientific information system for management is to replace traditional approach with systems approach by providing better information to the decision-maker. MIS thus improves a manager's responsibility by enlarging his job scope and result orientation.

8.15 SELF-ASSESSMENT QUESTIONS/EXERCISES

1 Suggest some reports which may be rendered to the various functional executives and the various levels of management. Also indicate some problems on which special reports may be rendered.

2 What factors determine the form of presentation and scope of data to be included in a folder proposed to be given every month to the top management of an industrial undertaking by its accountant? Mention the information you would include in such a folder, indicating the industry.

3 "While submitting cost reports, accuracy should not be achieved at the expense of either promptitude in presentation or excessive cost of preparation". Discuss.

4 The Group Accountant of a large industrial group of companies is concerned that the individual companies are all spending considerable amount on computerising their accounting operations. He points out to you, as your assistant, that there is no evidence of increased efficiency or of reducing costs resulting from this expenditure. He considers that there may be benefits if a method was devised for measuring performance in the accounting departments by the use of indices. You are required to prepare an outline of an analytical report on accounting costs and manpower for the initial information of the accountants of the individual companies. This should show:

a) the purpose and scope of the report
b) the value of the indices to the individual companies
c) the use of the indices at group level
d) the basis for selecting indices
e) An outline of the instructions for compiling indices for the accounts payable function

5 Your organisation has grown very rapidly over the past five years. The new director feels that there is insufficient management control information available within the organisation.

As a Management Accountant you have been asked to help him understand the basis on which you will try to develop control accounting.

You are required to prepare notes on the following:
a) the behavioural aspects of control accounting;
b) the operation of an accounting control system;
c) two detailed instances in which accounting control could have a significant impact.
d) the impact of computer on accounting control system (show one practical example).

6 The Chief Executive of your organisation asks for a detailed examination of material cost control procedures. Bearing in mind the need for a comprehensive review, explain the areas to be examined.

8.16 FURTHER READINGS

Anthony, Dearden & Vancil 1988, *Management Control Systems, Cases and Readings* – R. D. Irwin, Homewood.

Anthony, R. N. *Planning & Control Systems : A Framework* R. D. Irwin, Homewood.

ICMA (UK) – *Presentation of Information to Management.*

ICMA (UK) – *The Design of a Management Information System* Part I

Murdick, Robert. G, and Joel. E, Ross 1984, *Information Systems for Modern Management* – Prentice Hall.

UNIT 9 PERFORMANCE EVALUATION

Objectives

The objectives of this unit are to acquaint you with the:

- importance of performance evaluation to management;
- concept of designing Performance Evaluation Report;
- Measurement and control of performance in different organisational segments.

Structure

9.1 INTRODUCTION

As pointed out in the previous unit, the principle purpose of management reporting system is to provide periodic communication concerning the efficiency and effectiveness of current business activities. The reporting system should provide timely information which makes the managers aware of their relative success and which identifies problems with operations under their control. However, traditional income statements and balance sheets are inadequate for the informational needs of performance appraisal. For performance evaluation, the reporting system should be directly concerned with current operations such as sales volume, product mix, expense levels, capacity utilisation, materials yield and similar measures of operating results. They should provide properly structural information which answers such questions as : Which product line is most profitable? Which manufacturing division is most profitable? Which plant manager is most efficient?

The task in developing a reporting system is to specify data that are relevant to performance evaluation. Within the scope of management reporting system performance evaluation is the process of interrelating expectations and accomplishments. Budgetary control is a typical illustration of performance evaluation; and financial report lends objectivity and uniformity to this process. Actual operating results are measured and evaluated for compliance with previously expressed plans. Evaluation requires comparative analysis and conclusion by management as to the quality of operating results achieved.

9.2 IMPORTANCE TO MANAGEMENT

Performance evaluation is inherent in management activity. Investments and profits are planned, operating results are reviewed and corrective measures are specified. The identification of both problems and opportunities depends upon the success of this planning control cycle. Since conclusions emerge from the relation between actual and planned results, meaningful performance evaluation depends upon a sound planning system and competent operating standards. In comparing actual results with budgets (expected performance) or with standards (direct performance), management must be confident that quantitative expectations are fair, valid and reliable.

In planning information systems, therefore, the specification stage should include a design of all aspects that are important to users. Extensive systems planning, sound controllership and competent financial reports are essential antecedents to the process of performance evaluation. Successful operating control depends on the quality of accounting information. Objective performance evaluation also involves human relations. The evaluation base, consisting of standards, budgets or other expectations must earn the confidence of both superiors and subordinates. Ideally, higher management relies upon the validity of performance indicators and lower management believes in the fairness of such measures. To attain this ideal state, both the personal and impersonal aspects of performance evaluation merit attention.

9.3 IMPERSONAL/PERSONAL ORIENTATION

The reporting systems should distinguish between the impersonal and personal dimensions of performance evaluation. Different measures should be devised to evaluate the performance of managers who are responsible for particular organisational units. The first approach is entity or segment oriented while the second concerns responsibility and personal involvement. With segment orientation, financial reports address specific operating characteristics of an impersonal entity. Operating results can be analysed for sub-entities or segments of a total organisation. Specific financial reports are meant to support decisions e.g. invest in facilities, engage in product promotion, selling joint products at split-off stage etc. Recurring financial reports then monitor the wisdom of these decisions. To judge the merits of a single manager, other financial statements are prepared to reflect a personal orientation. Reports with personal orientation are, therefore, needed for self-evaluation by managers and also for review by immediate superiors.

9.4 MEASURING PERFORMANCE

Several margin-based measurements are potentially useful in different performance evaluation problems. For example, contribution margins indicate the ability of various product lines to recover fixed costs and generate profits. Since this measure is segment oriented, the profit potential may be analysed independent of the problems of responsibility fixation. As an intermediate measure, production margin translates manufacturing activities into output values and also focuses upon the incremental relation between production and contribution margin (see Exhibit 9.1).

The basic evaluation objectives regarding segment manager is to measure fulfilment of responsibilities by relating controllable cost and revenue elements. Short run and long run performance margins are possible gradations of this measurement. These time-related measurements inject sensitivity into performance evaluation because of the differences between discretionary and committed fixed costs. Controllable fixed costs incurred as a result of periodic approval or appropriation decisions (discretionary) should be deducted in measuring short run performance margin. The performance measure should exclude costs that are unavoidable or committed for several years. Separate measure should apply in evaluating the controllable effects of short range and long range decisions of segment managers. Traceable fixed costs are directly identifiable with division activities and are resolved into controllable and uncontrollable elements with regard to the segment manager's authority and responsibility. Exhibit 9.1 illustrates various types of margins.

Illustration

Margin at Exhibit 9.1 Different Levels

..... Division's Operating Results (..... Period)

		Hypothetical *Rs. (lacs)*
Revenue		100
Less:	Variable Expenses: for manufacturing	30
	Production margin	70
	for Selling & Distribution	20
	Contribution Margin	50
Less:	Traceable fixed expenses: (subject to division control)	
	Discretionary fixed expenses	10
	Short run performance margin	40
	Committed fixed expenses	20
	Long run performance margin	
	Not subject to division control	
	Discretionary fixed expenses	10
	Short run segment margin	10
	Committed fixed expenses	5
	Long run segment margin	5

9.5 MULTIPLE PERFORMANCE CRITERIA

Segment orientation permits development of performance indicators for products, divisions and other organisational sub-entities. Performance evaluation for managers of sub-entities requires measurements which concentrate on factors subject to the influence and control of these individuals. Therefore, the time dimension of variables affecting performance must be introduced and financial reports should be designed to facilitate performance appraisal and to address a particular orientation (see Table 9.1)

Table 9.1: Types of orientation and their characteristics

Orientation	Principal Characteristics
Impersonal	Segments such as organisational units, geographic locations, products
Personal	Responsibility and effects of personal decisions by segment managers
Short-run	Results responsive to improvement by modifying recurring decisions
Long-run	Results affected by commitments and decisions subject to infrequent revision

Since each orientation has inter-face with the others, the relationships among the above mentioned attributes should be considered in designing financial reports for specific performance evaluation objectives.

Activity 1

a) What criterion/criteria is/are taken into account in evaluating the performance of the unit of the organisation of which you are the manager/supervisor or with which you have been associated?

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b) Critically examine the performance measurement and evaluation system of any organisation with which you are familiar. In case you are not satisfied with the system, suggest an alternative format.

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9.6 DESIGNING PERFORMANCE EVALUATION REPORT

Establishing an effective performance evaluation system aided by financial reports is a cooperative accounting — management process. Internal financial statements should correspond with basic control objectives. Management must identify the responsibility areas and impersonal segments for which revenues, expenses and other quantitative measures are relevant. For personal orientation, integration of reports of several levels of supervisory responsibility requires planning. Guidelines for the design of suitable financial statements are essential for success. A basic problem is to identify segments and managers for which evaluation of operating performance is desired. To facilitate subsequent reports and systems design, there are four basic guidelines:

- Establish desired segmentation
- Identify separable and controllable costs
- Select desired performance indicators
- Relate measured performance to expectations

Segmentation: Segmentation define sub-entities for which performance — oriented information must be reported. Segments may consist of product lines, geographic divisions, customer classes, production unit or departments, etc. When separable revenue and cost information having particular attributes is prescribed, a segment is thereby identified. Accounting systems must be structured to supply information concerning the activities of these sub-entities.

Separable-Controllable Costs: Separable costs, revenues and resources are needed to evaluate the performance of a particular segment. As a concept, separability involves the direct or traceable financial attributes of a sub-entity. Avoidable costs and cost allocations are typical accounting problems associated with implementing this concepts. Secondary classification then identifies the financial attributes controllable by individual segment managers. Cost studies to establish separable — controllable classifications impinge directly upon the impersonal-personal interface.

Performance Indicators: Performance evaluation requires the interrelation between measured performances and related expectations. Performance measurement is, therefore, relative. Measurement techniques will logically concentrate upon certain of these variables:

i) **Results Achieved** in terms of sales, units produced, orders booked and similar aspects of output or accomplishments.
ii) **Efforts Expended** in terms of input factors, such as machine hours, labour hours, customers contracted, miles driven etc.
iii) **Costs Incurred** in terms of period costs and capitalised costs incurred to support both current efforts and efforts to provide future capabilities.
iv) **Resources Employed** in terms of personnel, physical and monetary measures of capacity and relative ability to generate results.

As indicators of potential performance these four variables can be arithmetically manipulated to produce measures of profitability, productivity and efficiency. Relative emphasis of various performance indicators, individually or in combination with others, is an important management decision. To avoid the undesirable consequences of emphasising one facet of results, effort, costs of resources, multiple or composite indicators may be felt necessary.

Performance vs. Expectations: Comparing measured performance with previously established expectations permits conclusions as to the quality of operating results. Standard costs, flexible budgets, sales quotas and similar criteria constitute the set of expectations or desired performance levels. Financial reports should exhibit these comparisons and present analytic and diagnostic commentary to facilitate interpretation. Variances must be explained, differences reconciled, effects associated with causes, and understanding of reports promoted by seminar presentations when warranted. Actions founded on performance evaluation tools are the management responsibility.

9.7 RESPONSIBILITY ACCOUNTING AND MANAGERIAL ACCOUNTABILITY

As you noted in the earlier unit, responsibility accounting needs a precise and specific identification of the individual areas of responsibility specified by the organisation structure. Areas of responsibility are the organisational units within an organisation subject to the direction of an individual who has been assigned the responsibility and delegated the authority to accomplish an objective(s). The ultimate refinement in responsibility areas is that of the individual workers or a group of workers, within a work centre.

The essence of responsibility accounting is the accumulation of costs and revenues according to areas of responsibility in order that deviations from budgets or standard costs can be identified with the person or group. The objective of responsibility accounting is not fault-finding but it is to establish a means of performance maintenance and control (monitoring)

Implicit in the concept of responsibility accounting and cost control is the idea that a area of responsibility should be charged with only such costs as are subject to the control of the person in charge of that area. There is no place for 'non-controllable costs' in the framework of responsibility accounting. All costs are controllable at some point or other by some person or group. The costs which are not controllable by one individual or group are always controllable by other individuals or group.

For the purpose of responsibility accounting, though rupee is supposed to be the only usable language, there are also different non-rupee measures of performance e.g. in terms of units produced, hours worked, quantity of material consumed, service rendered to the customers etc.

Responsibility accounting presupposes the control of performance through the areas of responsibility. But managers are generally not paid to carry out some activities. Their real reason for existence is to accomplish desirable end results for their organisation. This can be clarified by taking the example of role of management accountant in an organisation. Often, the financial activities become an end in themselves and management accountant loses sight of the results that these activities should be leading to. Thus a management accountant is not paid to keep books or prepare reports. These are merely tools of his activities which he uses to accomplish some end results. Because of the vast multiplicity of his services, extreme care must be exercised to prevent him from falling into the activity trap. In order to avoid the trap, the management accountant should establish his accountability. As a first step in establishing accountability a manager should throw out the traditional job description which supposedly sets forth the job requirements. The second step is to clearly delineate the specific results which he must achieve during a particular period of time. Specifically, the traditional type of job description must be replaced with a clear-cut statement of accountability.

There is a great deal of confusion as to the difference between responsibility and accountability. The distinction between these two words is of major significance, particularly in the delegation process. Responsibility describes the manager's global assignment, e.g., he is management accountant or incharge of the management accounting functions. Responsibility establishes the fences around the operating area the manager directs. It can be viewed as an area in which he conducts his managerial actions. It is more general than accountability in that it does not spell out the specific results to be achieved.

Accountability, on the other hand, is quite specific and details the concrete results the manager must produce. It flows logically from responsibility. The comparison can be listed out as is shown in Table 9.2.

Transition from responsibility to accountability may be effected through the selection of Key result areas, which help the manager to ensure that he is translating his responsibility into high-priority objectives. 'Key result areas' may be defined as the primary aspect of the manager's job, his true mission. They guide the manager towards setting his priorities in terms of time and effort in a manner designed to realise the greatest return. They give real meaning to Drucker's counsel, that, "managers must allocate resources, specially high-grade human resources, in the manner which provides opportunities for high economic results"

Table 9.2: Responsibility and Accountability Compared

Responsibility	Accountability
Indicates the scope of the manager's job or the major functions he directs, e.g. he is a budget manager of a management accountant	States the results he must achieve within his responsibility e.g. reduce total data processing cost by 10% during 1989
Concerned with organisation chart	Key to delegation
Job related (more impersonal) General (says where he works)	Manager related (highly personal) specific (tells what he must accomplish)
Only loose control possible	Tight control possible
Ongoing, seldom changes	Self-liquidating, should change at end of each targeted period
Specific authorities not established. Performance measurement almost impossible	Specific authorities must be established. Performance measurement possible and highly desirable
Poor basis for compensation and reward	Most equitable basis for compensation and reward
Management development in general	Management development is specific
Poor motivator. Usually expressed in a traditional job description	Effective motivator. Better expressed as objective (to be achieved).

Key result areas should always be delineated before the manager writes his objectives i.e. the latter should flow from the former. The following example demonstrates the undesirable consequences of writing objectives before selecting the Key result areas which result in bulk of rather routine, low-priority matter:

Job viewed as	Low priority objectives
1 Maintain records	1 Reduce record cost by 5%
2 Prepare reports	2 Submit monthly operation report by the 5th day of the month
3 Administer budget programme	3 Investigate and report on all variances exceeding ± 5%

As objectives should concern priority rather than routine parts of the job, the priority must first be separated from the routine. Key result areas are concerned with ends, not means. One of the ends of a management accountants' job is the timely and accurate measuring of organisational performance. To accomplish this end, he maintains books and records (the means). Key result areas concentrate on the 'what', not on the 'how' The 'what' in management accountants job consists of the accurate and timely measurement. The books and records comprise the 'how'. Finally, Key result areas concentrate on the ultimate output rather than the efforts expended to reach the output. Typical Key result areas of a management accountant job are:

- Accurate and timely measurement of operations
- Information and recommendations for decisions making
- Cost levels, e.g. purchase of equipment, supplies for own department
- Cost of capital
- Capital inflow
- Return on investment
- Optimum cost of departmental operations
- Security of corporate assets

Key result areas also help to avoid overlooking certain critical aspects, that must be covered by objectives. If a manager starts structuring his objectives without giving adequate attention to the Key result areas, he will lack the guidance the latter provides to the total content of his accountability.

Examples of typical Key result areas for specific jobs:

Finance Controller	• Cost of capital • Availability of capital • Return on investment • Working capital • Safety of investment • Liquidity
Credit Controller	• Bad Debt level • Ageing • Line of Credits
Controller of Data Processing	• Machine Utilisation • Personnel Utilisation • Cost/Benefit ratio • Output Quality

Activity 2

Prepare a list of Key result areas of the function unit with which you are concerned and rank them in order of importance.

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9.8 DIVISIONALISATION

As a company grows, the type of organisational structure suited to it at one time may have to change. As more and more line managers and employees are hired and as the company becomes more complex, there is the necessity for decentralising the authority to make decision. Divisionalisation takes decentralisation one step further. Divisionalisation requires that operating management be responsible for both the profitability (income and expenses) and the investment (assets as defined) of each of the separable and identifiable units of the company.

Such identification is a corporate decision which takes into account several factors such as:

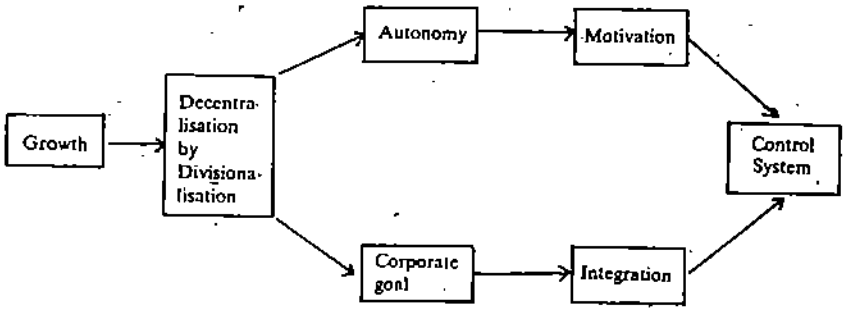
a) Capabilities of operating manager;

b) Economic advantages of specialisation of labour resources and product;

c) Industry, geography of market, product and other relationships;

d) Divisionalisation due to internal growth or through acquisition.

Divisionalisation is normally accompanied by the enlargement of the responsibility centre concept from cost centre level to the profit centre level. This shift presents a two sided dilemma as show.



While it is expected that better motivation will result (by granting autonomy to profit centre management) from more of self-control there is also possibility that divisional efforts and aims may run counter to organisational goals.

The basic problems that confront divisionalised companies are:

- How can ROI be used as a tool to measure managers as a basis for declaration of compensation and bonuses?
- How are transfer prices between and among divisions to be handled?
- What does one do with the sticky problem of service cost transfer and cost allocation?
- How can the financial system prevent all the games managers play in achieving their objectives?
- How does corporate management measure, evaluate and control the performance of operating manager?

9.9 R.O.I. APPROACH

There are some distinct advantages of the ROI system. The advantages of ROI, cited by companies, include the following:

a) ROI is reported to be the best single overall measure, of past performance. In one single figure, both the effectiveness and efficiency of the division is summarised. All accounting assumptions, external factors and seasonal variances are smoothed out into one measure. Any factor that affects ROI can be traced either to margin or turnover. An erosion or improvement in either margin or turnover can be seen to have a similar effect on ROI. The manager can determine where the change from plan took place and can also determine quickly the relative sizes of the various components of assets.

b) ROI is a common number which can be used:
   - to compare divisions with each other;
   - to measure the achievement of objectives, and
   - as a basis for rewarding good performance.

   ROI is useful, especially when different divisions are of different sizes. Each one can be measured on a common basis.

c) It is easily understood. The operating manager, who does not have a good background of management accounting can understand what is ROI. He generally knows that accountants have some difficulties with regard to allocation, transfer prices and investment responsibility. As long as the accounting system in consistent, he knows the meaning of ROI. He know that he can improve ROI both by improving margins and or by better controlling his assets.

   Despite the widespread use and advantages of ROI, there are several problems in relying exclusively on ROI as an overall measure of (past) performance. The most important of these are as follows.

Communication problems: Historically, accountants have used ROI in so many different contexts that operating managers have become confused. ROI is used in the following ways:

- as a measure of past performance of the division or of the entire company;
- As a measure of accounting return on proposed new venture capital;
- As a measure of DCF returns on investment;
- As a measure of return on total company assets; (Return here is defined as net income/total assets.)
- As a measure of divisional return, but only after a considerable amount of uncontrollable allocations are charged to the division.

Thus, managers of different divisions may understand or interpret ROI differently. The concept of ROI as understood by one manager may not match with the concept of another. The finance people's task in relation to ROI should be that of communicating and educating the operating managers about the uses and abuses of each of its many definitions.

Problems relating to investment base: The accounting theories have been wrestling constantly with the issue of whether the cost of fixed assets really reflects value during inflationary periods. Use of cost on the balance sheet arbitrarily increases ROI over what it would be, if fixed assets were recorded at the higher replacement cost figure. A further problem is the use of book value by most companies in their investment base. Book value (net block) declines as the assets becomes older. A similar amount of return generates a higher ROI, because of the declining base. Further complicating the use of book value is the fact that an older 'bread & butter' division often shows a higher ROI than a newer venture whose asset base has not declined to some extent as compared to the asset base of the older division. Comparability among divisions is adversely affected to say the least, when assets ages vary widely.

The other problem is that of shared assets. Companies may solve this problem by defining one division as the landlord and the other as the tenant. The investment base then becomes the responsibility of one division which rents out certain of its assets to other cost or profit centre.

Problem relating to earnings: The objective of divisionalised profit reporting is to reflect those items of expenses over which the division manager has some degree of control. The issue arises as to the level of controllability that exists in a division.

A further problem in measuring the return is the difficulty in applying generally accepted accounting principles to divisional earnings. Accounting treatments of incomes and expenses often determine the profitability of a division rather than the economic return generated. One division may be engaged heavily in R & D while the other may have little. The first division will suffer in comparison, ceteris paribus, if the requirement is to write off all R&D expenditure in the year of incurrence.

Fiscal periods and timing: Another problem that exists with ROI as a measure of performance is the timing of the accountants' return on Investment. In a given year, different projects may be at various stages of development. Programmes like special advertisement, cost reduction etc. might have been undertaken for some of the projects implemented. Each of these may promise a return more than the first fiscal year and each may generate its own rate of DCF return. Further, the accountant takes all of these together and slices through them with his fiscal periods. The return generated for a period of time is, therefore, somewhat arbitrary, and can be largely dependent on accounting practices. On the other hand, the DCF rate of return on projects is considered to be the best overall method for determining project profitability. The accounting system often has difficulty in reconciling the two.

The other timing problem relating to accounting determined ROI is that the return and investment are stated in annual terms. Returns are given for one year while investment is either an end-of-year amount, a beginning amount or some sort of average. Another common problem is the delaying of the start-up time of the project, because of heavy initial investment. Such an investment increases the asset base proportionately more than the benefits to be derived. Accountants are quick to recognise that in DCF analysis, the DCF rate of return is ordinarily lowered if a proposed profitable project is delayed.

Activity 3

What importance is attached to ROI in the planning and control process in your organisation? Do you think the approach needs a change? Justify your answer.

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9.10 INTER-DIVISIONAL PRICING

Establishing profit centres in a business implies that the operating manager must have the authority and responsibility to control both costs and prices of the centre. Where no responsibility to control profit exists, the activities of the unit can best be described by the costs centre or service centre. One of the difficulties that involves accountants in divisionalisation is the matter of transfer pricing. The valuation of the products, either in process or finished to be transferred between profit centres, is guided by the kind of markets which exist for the materials or products.

- Some materials or products have alternative sources of supply for which there is an available competitive price;
- Some materials or products may be supplied to third party customers to establish a continuing competitive sales price;
- Some materials or products have no established outside markets and the prices must, therefore, be determined on some other basis;

Most divisionalised companies have established policies which govern transfer pricing. Among the considerations in such policies are:

- If materials or products are of type (a) above, use that price as a ceiling;

- The marketing division may negotiate the price. Consideration must be given to cost savings resulting from internal sales, e.g. warehousing, sales, carrying costs of inventory and receivables and longer production runs;
- Full consideration must be given to the variable or marginal cost of production to be sure that total company will take advantage of unused capacity;
- The buying division should agree on the quantity to be purchased in a given year during the annual objective setting planning process;
- Favourable production variance after agreement should accrue to the selling division.

These are among the few of the considerations which must be resolved in any divisionalised company. Where agreement on prices cannot be reached, corporate finance is often called to arbitrate. The various methods of transfer pricing, as you are aware are discussed in unit 5 in block 2.

9.11 CORPORATE AND INTER-DIVISIONAL CHARGES

The objective of allocating costs and developing charges has been met in various ways. Many times corporate and service charges are allocated to profit centres on the basis of sales revenue. Sometimes a company will develop standard rates of service. In more complex redistribution and allocation systems, simultaneous equations are used in developing reciprocal rates.

Policies governing inter-divisional and corporate charges should be guided by the following principles.

a) All costs ultimately must be borne by the Profit Centres;

b) All costs initially must be charged to the department or individuals responsible for incurring the cost;

c) The allocation problem, however, relates to what happens to the costs between (a) and (b) above. Different levels of costs must be recognised during the annual planning/objective setting process:

   i) Direct costs of profit centres — These are costs which are incurred directly by the profit centre such as production costs, sales expenses, direct overhead support;

   ii) Support and service centre costs should be charged to the profit centres on a service-rendered basis. Such costs would otherwise be incurred by the profit centres. The reasons the service centres are centralised is to assure efficiency and uniformity. To avoid complex allocations and redistributions such costs should be charged out on the basis of an easily understood base..

   iii) The third level of costs is corporate in nature e.g. legal, audit, statutory etc. and others are difficult to trace directly to the profit centres. These costs should be identified separately on any reports that go to the profit centre managers. There is the danger that such charges will be allocated arbitrarily. The alternative, however, is not to allocate and not to make the profit centres aware of costs that are incurred by the corporate office. If profit centres are charged for corporate expenses as a percentage of sales, the operating managers are likely to show greater interest in what amount goes for corporate spending then if such an awareness does not exist. Projects may have been taken up because someone at some time thought that they were good ideas, but through fuzzy overhead accounting allocations, the expenditures on such projects remained hidden from sight.

d) Management accountant may generally get involved in the disputes relating to interdivisional financial relationships. However, he must spend his time in developing an overall framework for resolving issues, during the objective setting process rather than in developing complicated reallocation systems, involving historical data. He must realise that interdivisional charges and allocations are means to an end, and not ends in themselves. The accounting and finance system must be tuned to the informational requirements. He must also guard against arbitrary allocations which are neither understood nor accepted by the operating managers. Evolving of standards should rest with those who are responsible for

them. Any attempt at arbitrarily passing on the variances to other divisions only weakens the performance evaluation system. The management accounting system must define the person who is responsible for costs and variance from standard.

Activity 4
Are you in favour of inclusion of corporate office expenses in the performance reports of divisions? Support your answer with well reasoned arguments.

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9.12 EFFECTIVE USE OF MANAGEMENT ACCOUNTING SYSTEM

There are several examples of the 'game managers play' with an accounting system in the absence of a comprehensive management system. Suppose, the Chairman advises all division managers to begin preparations for a 10% reduction in expenditure for the duration of the year because of the cost-price squeeze.

Among the things, a division manager may do to accomplish such an objective are the following:

Category 1
Reschedule a major capital expenditure project; defer a major rework project on a machine; delay the opening of a new plant; delay product development of a new line; defer purchases of capital assets:

The veteran manager knows that from an accounting point of view the delaying of such expenditures will result in higher accounting profit currently as otherwise a portion of such expenditures has to be written off against the current budget.

The veteran management accountant knows, however, that the delay of a profitable project reduces profitability in the long run because of the time value of money. The longer the delay, the longer the wait for positive cash flow.

The operating manager must be held accountable for his annual objectives and must not be allowed to give up future profits at the expense of current profits. If operational objective is to begin construction of a new facility by say, July 1, he should not be allowed to delay his implementation in order to spend less money this year.

Category 2
Reduce service centre purchases; cut back on purchases from central data processing, reduce purchase of products from another division; reduce requirements of corporate engineering R & D and quality assurance.

This approach of cost reduction forces the selling division to retract its service level. As its level of expenditure was determined during the budget process, it is stuck with a considerable amount of fixed costs which it cannot charge out. The buying division will still need some services so it will probably look at time-sharing to cut computer costs or do its own internal training instead of letting corporate office do it. The problem with such cutbacks is that the corporation may not save at all in the long run with such games taking place.

Category 3
These are the expenses that are cut in one's own department, that may not necessarily hurt. A veteran manager knows that cost-cutting occurs at appropriate times during the business cycle. He prepares for this by extra padding during the year, so that when he is hit, it doesn't hurt.

The management accountant knows that the best way to reduce costs in the long run is through self-regulation and self-control. Budgets can be used by managers in a way that they compound an otherwise effective management system. As the management system

is dynamic, the budget must be used as a tool in the planning and allocation of resources and not as a means of putting aside the funds.

9.13 COMPENSATION FOR DIVISIONAL PERFORMANCE

When individuals and groups know that their good performance will be rewarded i.e. when they perceive the relationship between performance and rewards exists motivation is enhanced. The process of compensating organisational units involves two distinct phases:

- The setting of objectives for each unit, segment or division
- The measurement of achievement of these objectives

Although all managers ought to be involved in the objective-setting process, the management accountant must be involved in the measurement of the results. For this reason, transfer pricing and interdivisional charges are important tasks for him. To measure, however, requires something be measured. What is measured is the attainment of objectives.

An interesting exercise is to ask the operating managers as to what they perceive to be their primary financial objectives. Most will respond in one or a combination of the following:

- Maximise Sales;
- Maximise Profits;
- Maximise earnings per share;
- Maximise ROI;
- Maximise the return to shareholders.

While all of these are corollary objectives, the primary financial objective of the organisation must always be "to maximise the amount of profit in the long run, but subject to a minimum rate of return on investment". This rate is usually taken to be the company's cost of capital — compounded on the basis of a weighted average cost of debt and equity. Assume that two divisions with equal risk show the following performance for a given year

(Rs. '000s)

	Division A	Division B
Sales	1,000	2,000
Expenses	800	1,750
Profit	200	250
Asset invested	1,000	2,500
Margin	20%	12.5%
Turnover	1	0.8
Return on Investment	20%	10%

Analysis of these results on a comparative basis shows the following (better/worse). condition:

	Division A	Division B
Sales (Rs.)	Worse	Better
Profit (Rs.)	Worse	Better
Asset Turnover	Better	Worse
Margin	Better	Worse
Return on Investment	Better	Worse

Which of these has performed better? Traditional measurement will not give definite answer. The answer must depend upon what the objectives are. If both divisions agreed to an objective of 10% ROI, then B obviously did better than A, B not only reached its objective but also generated an additional profit of Rs. 50,000 beyond 'A'.

While the financial system can help in the measurement process, the exact nature of the corporate compensation plan ultimately must depend upon the achievement of specific objectives.

Because of the varying risk characteristic among divisions each may have its own specific objectives. Amount of profit and ROI are the two most common criteria. Another useful tool, as we discussed in Unit 6, is the 'Residual income' method which refers to the net income left after charging the division for its amount of assets times the minimum required rate of return.

The residual income in the example taken earlier can be computed as follows:

	Division A	Division B
Assets	1,000	2,500
Imputed Interest (10%)	100	250
Actual Profit	200	250
Residual Income	100	0

This method of measuring income is also useful for providing compensation which may also depend upon the achievement of other objectives. A clear delineation of profit, ROI, residual income and new investment objectives is essential to the maintenance of a dynamic enterprise.

Activity 5

To what extent is the importance given (or should be given) to financial indicators of performance evaluation in a divisionalised structure? List the arguments for and against.

For	Against
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9.14 MEASURING AND CONTROLLING PERFORMANCE IN AN MBO FRAMEWORK

An attempt to develop a system which measures, evaluates and controls performance by using financial techniques and tool is a MBO framework. Decentralisation of both authority and responsibility is the essence of management by objectives. Despite the difficulties encountered by divisionalised companies in measuring organisation's performance, the use of ROI in this connection with a MBO system has proved to be a significant factor in the success of a dynamic management system. The companies which use the concept of ROI only in a static sense have not achieved the degree of success in their MBO systems as achieved by those that use ROI in a dynamic sense.

To illustrate, some companies spend much time and attention on the technical aspects of ROI formulations and take ROI only as an end in itself — the end being a measure of historical performance.

In a dynamic concept of ROI, it becomes an effective tool of communication and management over a long period of time than just one budget year. Furthermore, ROI is useful because it focuses attention on all the important financial elements of a business – the balance sheet and income statement items. Finally, ROI in a dynamic system becomes an instrument for coordinating and harmonising all of the objectives and plans of the various components of a business.

For an effective MBO system the guidelines and policies on transfer pricing must clearly reflect the management philosophy of the company. In an effective MBO system, decisions on interdivisional pricing must be made during the objective-setting planning process. What is important in a MBO system is that the operating managers should know what the transfer prices are going to be so that they could set their objective and plans accordingly and be prepared for evaluation on this basis.

In dynamic companies with MBO framework, objective-centered bonus systems are often more successful because of relationship among objectives, performance and rewards. Such systems focus on both individual and group achievement and are thus essential components in MBO system.

Last, but not the least, MBO per se is not a panacea and by itself will accomplish nothing. It is not a crutch for a weak management. A poor manager is a poor manager, no matter what approach to management he is trying to operate under. In the hands of a competent and enlightened management group, MBO is a potent tool for improving organisational effectiveness.

9.15 SUMMARY

Traditional income statements and balance sheet are inadequate from the point of view of information that is needed for performance appraisal. Different types of reporting systems directly concerned with current operations for performance evaluation should be developed. Since conclusions can emerge only from the relationship between actual and planned results, meaningful performance evaluation depends upon a sound planning system and operating standards. Thus, successful operating control and the quality of accounting information are clearly interdependent. The objective performance evaluation also involves human relations. The reporting system should distinguish between the impersonal and personal dimensions of performance evaluation.

Several margin-based measurements are potentially useful in different performance evaluation problems. The objective of performance evaluation is to measure fulfilment of responsibilities by relating controllable cost and revenue elements. Segment orientation permits development of performance indicators for products, divisions and other organisational sub-entities. Thus, establishing an effective performance evaluation system aided by financial reports is a cooperative accounting management process.

As a company becomes organisationally more complex there is the necessity for decentralising the authority to make decisions. Divisionalisation takes decentralisation one step further. Divisionalisation requires that operating management be responsible for both the profitability and the investment of each of the separable and identifiable units of the company.

In divisionalised companies, the following basic problems are confronted:

- Measurement, evaluation and control of the performance of operating managers;
- Determination of transfer prices;
- Corporate and Interdivisional charges;
- Effective use of management accounting system;
- Compensation for divisional performance.

To tackle such problems, systems may be developed to measure, evaluate and control performance by using financial techniques and tools in a MBO framewok.

9.16 SELF-ASSESSMENT QUESTIONS/EXERCISES

1 Non Standard Co. Ltd. is a group of companies with its head office in Calcutta. The company started business in structural engineering in 1929. Since then the company has diversified and now comprises of three divisions operating in five different sites throughout India.

Capital employed in the last accounting year-ended totalled Rs. 25 crores with a turnover of nearly Rs. 37 crores. The division wise breakdown of the figures is as under:

Divisions	Capital Employed *(Rs. Crores)*	Sales *(Rs. Crores)*	Profit Before Tax *(Rs. Crores)*	No. of Employees
Structural Engg.	6.00	15.10	1.55	700
Pressure Vessels	10.00	11.20	0.30	750
Foundry	9.00	10.50	0.15	900

Each division is regarded as a profit centre. This creates some complications because of inter-group company transfers. The two divisions of the company are represented on three of the five sites. Discuss what you consider to be the likely strengths and weaknesses of the profit centre approach in this situation.

2 What do you see as the strength and weaknesses of evaluating the performance of individual managers strictly on the basis of actual performance and costs against budget.

3 An industrial group has two divisions : 'A' and 'B'. The output of Division 'A' is product X two units of which are used by Division 'B', for every one of its product Y. Division 'B' has first call on Division 'A's output but there is a separate market outside the group for the balance of Division 'A's output. All the output of Division 'B' is sold outside the group. The maximum capacity of Division 'A' is 1,30,000 units of X and that of Division 'B' is 50,000 units of Y per annum. Each division maintains a stable level of stocks throughout the year.

The group would like to examine the result of using different bases of transfer pricing under different scenarios (i.e. situations that could be expected to arise). The bases of transfer pricing are:

Absorbed standard Cost	AS
Market Price	MP
Variable Cost plus 80% of Division A's fixed cost	VC

Scenario Number	Product X Market price (per Unit) (Rs.)	Product X Total demand ('000s unit)	Product Y Market price (per Unit) (Rs.)	Product Y Total demand ('000s unit)
15	30	100	100	40
23	25	70	90	30
29	35	130	90	30

Cost / unit are:

	Product X	Product Y
Variable cost exclusive of purchases	20	12*
Fixed cost	5	18
Budgeted volume in units/annum	1,00,000	40,000

*excluding 2 units of Product A

Part I

You are required to calculate the profits shown by Division A and Division B for the following even situations:

Scenario	Bases of Transfer		Pricing
15	MP	VC	–
23	–	VC	AS
29	MP	VC	AS

Part II

Assume that Division B receives overseas Order for 20,000 units of Y that will in no way influence its other clientele.

a) As manager of Division B state with supporting calculations, whether you would recommend acceptance of the order in the following two situations:

Scenario	Price/unit (Exfactory) (Rs.)	Bases of Transfer pricing
23	55/-	AS
29	65/-	MP

b) If you were Managing Director of the whole group, state briefly with reasons, whether you would recommend acceptance of the orders in a(i) and a(ii) above.

4 A large manufacturing company owns plant & machinery, which has been acquired at various dates since it commenced operation in 1950. The chief executive has

requested that these fixed assets be revalued on a current cost basis when assessing divisional profitability.

You are required to prepare a memorandum stating:

a) the detailed steps necessary to undertake this revaluation;

b) i) any action you consider should be taken to adjust asset lives;
ii) how fully depreciated assets would be dealt with;
iii) why the depreciation charge might differ from that shown in the historical account;
iv) the likely effect on the return on capital employed.

5 The operating departments (e.g. building, transport, printing, catering) of a local government authority supply services to several functional departments (e.g. education, road works, fire service). At present the total cost of each service department is allocated on a simple proportional to revenue basis to user departments.

As an aid to cost control, the authority has decided to charge the user departments for these services on the basis of cost or market price whichever is lower.

You are required to:

a) Indicate the benefits likely to arise from this decision;
b) outline the problems you expect may be encountered in putting the decision in practice;
c) state how these problems might be overcome.

6 The Building and Maintenance department of your organisation is responsible for maintenance of all buildings and plants, for capital works and their installation. What main features would you expect in a long and short-term appraisal of the performance of this function?

7 "There is only one valid definition of business purpose: to create a customer." (Drucker) – Explain critically this statement and indicate how this can be used as the basis for evaluating the overall marketing performance of an organisation.

8 Companies RP, RR, RS and RT are members of a group. RP wishes to buy an electronic control system for its factory and in accordance with group policy must obtain quotations from companies inside and outside the group.

From outside the group the following quotations have been received.

- Company A: Rs. 33,200
- Company B: Rs. 35,000 but would buy a special unit from RS for Rs. 13,000

To make that unit, however, RS would need to buy parts from RR at a price of Rs. 7,500

The inside question was from RS, whose price was Rs. 48,000. This would require RS buying parts from RR at a price of Rs. 8,000 and units from RT at a price of Rs. 30,000. However, RT would need to buy parts from RR at a price of Rs. 11,000.

Additional data are as follows:

- RR is extremely busy with work outside the group and has quoted current market price for all its products.
- RS costs for the RP contract, including purchases from RR and RT, total Rs. 42,000. For the contract of company B, it expects a profit of 25% on the cost of its own work.
- RT prices provide for a 20% profit margin on total costs.
- The variable costs of the group companies in respect of the work under consideration are:
  RR : 20% of selling price;
  RS : 70% of own cost (excluding purchase from other group Co.s)
  RT : 65% of own cost (– do –)

You are required from the group point of view, to:

a) recommend, with appropriate calculations, whether the contract should be placed with RS, Company A or Company B (RS at Rs. 30,900).
b) state briefly the assumptions you have made in arriving at your recommendation.

9 "In recent years there has been a tendency toward corporate decentralisation, accompanied by a setting of individual rate-of-return targets for corporate segments. This provides incentive because managers can operate their segments as if they were separate companies of their own." Do you agree? Discuss the reason.

10 Spokesmen of many companies which are heavily involved in government contract work often complain that defence work is not very profitable. They cite low-percentage profit margins as evidence. Are such contentions justified? Why, or why not?

9.17 FURTHER READING

Bhatia, Manohar L. 1986, *Profit Centres, Concepts, Proves and Perspectives,* Somaiya Publications, Bombay. (Chapter 11)

Chakraborty, S.K. 1976, *Management by Objectives – An Integrated Approach* – Macmillan, Delhi

Chakraborty, S.K. 1979, *New Perspective in Management Accounting* – Macmillan, Delhi

Chatterjee, B.K. *Accounting & Finance for Manager* – Jaico

Keller & Ferrara – *Management Accounting for Profit Control*

UNIT 7

2 (a) The requirement for gross paid hours is lowest for period 1 (4800 hours) and highest for period 10 (5867 hours). Accordingly, the manpower requirements for period 1 and period 10 are 30 men (4800/160) and 36.7 men (5867/160) respectively. Since 1067 (5867 – 4800) overtime hours exceed the limitation of 10% of the basic paid hours, overtime hours are to be restricted to 5280 for period 10 which would mean 33 men.

The labour costs work out to :

			Rs.
Basic	: 13 x 33 x 4 x 40 x 12	=	8,23,680
Employee Cost	: 13 x 33 x 4 x 60	=	1,02,960
Overtime	: 2592 x 18	=	46,656
	Total		9,73,296

(b) (i) The safety campaign costing Rs. 10,000 and reducing the paid absence by 1% is not advisable from purely financial viewpoint as this would result in a loss of Rs. 1,446.

(ii) There will be a net saving of Rs. 19,280. Hence, the course is recommended.

9 (a) It is advisable to first work out monthly cash forecasts and then prepare Profit and Loss Accounts since interest charged on overdrafts can be shown in the latter.

You may also work only a stock sheet in respect of raw material and finished goods.

(i) **Course 1**

Cash Forecasts	Jan. 19 x 9 (Rs.000)	Feb. 19 x 9 (Rs.000)	March 19 x 9 (Rs.000)
Opening balance	(12)	(110.16)	(78.74)
Receipts from Customers	83	93	100
Payment	179	60.04	60.04
Net in flow/(outflow)	(96.00)	32.96	39.96
Closing balance	(108.00)	(77.20)	(38.78)
Interest at 2%	2.16	1.54	0.78
	(110.16)	(78.74)	(39.56)
Profit and Loss Account:			
Profit	2.80	3.42	5.22

Note: Figures in the brackets indicate adverse balance.

Course 2

First work out the stock sheet in respect of raw material and finished goods.

Cash Forecasts	Jan.19 x 9 (Rs.000)	Feb.19 x 9 (Rs.000)	March 19 x 9 (Rs.000)
Opening balance	(12)	(56.1)	(17.77)
Receipts from Customers	83	84	70
Payments	176	45.32	45
Net inflow/(out flow)	(43)	38.68	25
Closing balance	(55)	(17.42)	7.23
Interest at 2%	1.1	0.35	—
	(56.1)	(17.77)	7.23

Profit and Loss Accounts:			
Profit	8.62	7.55	7.2

(b) Course 1

Balance-Sheet as at 31.3.19 x 9	(Rs.000)
Total Assets	675
Total of Capital and Liabilities	675

(c) Both the courses (of action) present a trade-off between profit and cash flows.

Course 1 allows for Rs. 1,140 profit over three months period—with the overdraft consequently being Rs. 1,10,160 by the end of January and still being Rs. 39,560 at the end of March.

Option 2, on the other hand results in a loss of Rs. 23,370 over the three months period. The overdraft, however, only rises to Rs. 56,100 by the end of January and is cleared completely by the end of March. The decision, therefore, depends on whether the improved profit performance under course 1 (Rs. 34,810) justifies the cost of higher overdraft levels. However, neither courses (of action) may be necessary if the new supplier can deliver in January 1989

UNIT 9

1) You may calculate Profit-capital, Profit-sales, and Sales-capital ratios for the company as a whole and for each division, viz., Structural, Pressure Vessel, and Foundry. Focus your attention on their respective levels of performance. Study the impact of the performances of the division on the overall performance of the company. For this purpose you may use ROCE (Return on Capital Employed) as a criterion.

Intra-group transfers generally complicate the measurement of performance. Two of the three divisions share common facilities at five sites and this may create problems overhead allocation and apportionment.

Some of the strengths of the profit centre system are that it enables (i) to draw attention on problem areas, for example, Pressure Vessels and Foundry divisions in this company; (ii) to take a decision on the closure of continuance of certain divisions; (iii) to judge the performance of top executives; and (iv) to maintain a system of budgetary control, including monetoring an evaluation.

Some of the short-comings of the system are that (i) it presuppose, that objective standards of measurement can be laid down. In reality it may be difficult; (ii) it may lower the morale of the executives who think that their performances are being harshly judged in view of the fact that all the factors are not within their control; and (iii) it may create more problems than solve them. where operations are of integrative nature and whose equipment of facilities in some of the divisions remain under-utilised.

3) **Part I**

Scenario 15	Profit		
	Division A	Division B	Total
Transfers at market price of Rs. 30	500	400	900
Transfers at variable cost	100	800	900
Scenario 29			
Transfers at market price of Rs. 35	1,450	(480)	970
Transfers at variable cost	950	20	970
Transfers at absorbed standard cost	850	120	970

Part II

(a) It is assumed that Division B is concerned with marginal cost.

Scenario 23
Transfers at absorbed standard cost:
Since the cost of Division B is Rs. 62, the manager would not recommend sale at ex-factory price of Rs. 55.

Scenario 29
Transfers at market price of Rs. 35:
Since the cost of Division is Rs. 82, the manager would not recommend sale at ex-factory price of Rs. 65.

(b) A group decision must be made by reference to group marginal cost.

Scenario 23
Since the group variable cost is Rs. 52, the order can be accepted at Rs. 55 because this will give a contribution of Rs. 3 per unit.

Scenario 29
Since Division A is operating a maximum capacity, the additional order should be undertaken only if the contribution is more than the contribution sacrificed in some other division. At a price of Rs. 65 the order is not acceptable.

8 (a) From the group point of view, it is advisable to place the contract internally with company RS which will cost Rs. 30,900.

9) The several assumptions are as follows:

(i) RR is fully occupied with other work and this job would displace equally profitable work.

(ii) RR's work for group is similar to alternative available e.g., although stated to be 'extremely busy' there may be limitations on individual machine availability or on certain types of skilled labour.

(iv) RR's undertaking the inter-group work will not jeopardise the existing external contracts or possible new outside work.

(v) Discussions with Company 'A' have exclude all possibilities of their utilising the special unit from RS which company 'B' is prepared to use; this would reduce their comparative quotation to Rs. 30,780 and become the more favourable one.

(vi) Inter-group work is of equal standard compared to the outside contractors.

(vii) The management involvement in all four companies RP, RR, RS and RT, with possible production schedule changes for RR, will not offset the saving of Rs. 2,300 over the complete outside job.

UTTAR PRADESH
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MBA-2.6

Management Control Systems

Block

4

SPECIAL APPLICATIONS

BLOCK 4 SPECIAL APPLICATIONS

In the earlier block of this course, we discussed the structure and process of control. In our discussions we explained various concepts, tools and techniques of management control. In this block, we take up management control in some special situations. This block consists of three units.

Unit 10 deals with Management Control in Multinational Corporations. The basic objectives and characteristics of management control in multinational corporations are explained. The issues relating to the measurement of managerial performance and the reporting system are discussed. The need for an appropriate management information system between the home country parent and the host country subsidiary is stressed and the contents of the reports comprising such a system are explained and illustrated.

Unit 11 discusses Management Control in Projects and Multi-project Organisations. An illustration of a typical project organisation and the usual structure of a multi-project organisation are presented. The general approaches to designing project organisation are explained. The various techniques for project planning and control, including the indicators of performance, are also dealt with.

Unit 12 deals with Management Control System in Service Organisations. It begins by explaining the characteristics of services. This is followed by a discussion on the design considerations in high and low contact services. The discussions then shifts to issues relating to management control in certain types of organisations like hospitals, hotels, and banks. The various techniques that could be usefully employed in such a organisations are suggested. The unit concludes with a brief discussion on the trends of change in the service industry.

Unit 13 looks at Management Control in Non-profit Organisations. The characteristics of non-profit organisations are first discussed. The distinction between non-profit organisations and service organisations is explained. The ticklish problem of measuring output in such organisations is discussed. Some other aspects relating to pricing, management structure, control and accounting are also dealt with.

UNIT 10 MANAGEMENT CONTROL IN MULTINATIONAL CORPORATIONS

Objectives

After studying this unit you will be able to understand the:

- perspective in which the multinational corporations/companies operate
- problems in designing control systems for a Multinational Corporation's (MNC) subsidiaries
- difficulties in designing investment appraisal, divisional performance appraisal and managerial performance appraisal systems for MNC subsidiaries.

Structure

10.1 INTRODUCTION

The basic need for Control arise because a manager is unable to perform all the activities by himself all the time and therefore he depends on a subordinate manager to act on his behalf as an agent. In the process he loses direct contact with the activities and depends on information provided to him by the agent. Through a mechanism of reward and punishment he elicits information which he uses for evaluation of performance of the agent. In case of Multinational Corporations, due to the physical distance between host country subsidiary and parent multinational headquarters, direct observability and information flow are both seriously hampered, thus making the problem of control somewhat more difficult. The problem becomes further complicated due to variations in inflation rates in different countries, fluctuations in exchange rates, effects of intra-company transfers and allocation of Central office costs among subsidiaries. Any management control system for MNC must take into account the above factors if the system has to be optimal and effective.

10.2 DEFINITION OF MULTINATIONAL CORPORATION

In the context of international business we hear words like global corporations, international corporations and multinational corporations. While in general these terms may be interchangeably used, there are actually subtle differences between them. Within these differences global and multinational corporations represent two extremes and international corporations fall somewhere between these two. In a

global corporation production facilities are generally centralised, and located in one or a few countries to get the advantage of economy of scale and cost. The products are exported from these countries to the others depending on demand. On the other hand in a multinational corporation, production facilities are generally located separately in each country and each country's operations are organised almost totally independently. However, within [illegible] dependence, there is always a need for integrating the operations of [illegible] view to achieve overall optimality for the parent compa[illegible] this optimality may in terms of economy, monetary repatriation, growth, surplus, etc.

Whether an international company shall move towards becoming a global company or towards multinational company will depend on the strengths of global pull factors or regional pull factors. If the global pull factors are stronger, the company will tend to become a global company. On the other hand if regional pull factors are stro[illegible] the company will become a multinational company. Some of the global p[illegible]a[illegible] and regional pull factors are given below:

Global Pull Factors	Regional Pull Factors
Strong comparative advantage in production	Strong restrictions in movement raw materials
Very high volume requirement for achieving cost competitiveness	Strong regulatory barriers to export and import
Highly localised craft and skill	Strong cross-national and cross-cultural differences
Strong fear of nationalisation of industry by host country government	High customs duty
Stronglyguarded technology	High transport cost.

When conditions are such that global pull factors are weak and regional pull factors are strong, the situation can be ideal for organising the company on multinational basis. Similarly when global pull factors are strong and regional pull factors are weak, the situation is ripe for organising it as a global corporation.

Activity 1

A) List the names of five companies which, as per your knowledge, are subsidiaries of multinational companies:

i) .....

ii) .....

iii) .....

iv) .....

v) .....

B) Gather the following information with respect to any one of the above named companies:

i) For how long the subsidiary has been in existence:

.....

ii) Percentage of shareholding held by the parent company:

.....

ii) Nature of business of the parent company and the subsidiary company:

.....

iv) What changes the subsidiary has undergone with regard to range of products, number of plants and their location, technology, and organisational matters:

.....

.....

.....

.....

10.3 BASIC OBJECTIVES AND CHARACTERISTICS OF MANAGEMENT CONTROL

Any management control system will have two basic objectives: to ensure optimal performance by a manager and to ensure optimal performance by the unit. The two aspects are important because it is possible that a manager may have performed well, but the unit may not have shown adequate results or conversely, the unit may have shown very good results without the managers having done enough to get credit for such results.

An indicator of managerial performance can be used to evaluate him. His compensation system (i.e., pay and perquisites) may be linked to this indicator.

On the other hand, an indicator of performance by the unit shows how the unit has performed as an economic entity. An indicator of performance of the unit helps in resource allocation or additional investment decisions.

Other Objectives of Management Control
In addition to the above two basic objectives, a management control system may have other objectives to achieve, such as

- To provide an early warning system regarding the operation
- To provide a set of standards, so that there is common wave-length of understanding about objectives.
- To motivate a manager to be concerned about the expenditure so as to get the maximum benefit out of such expenditure.

10.4 MANAGEMENT CONTROL IN MULTINATIONAL OPERATIONS

When we refer to control in MNCs, we generally refer to control by home country office (or the parent company) over the host country subsidiary. Here again, control may be two-fold, namely, control over the performance of the subsidiary as an economic entity, and secondly control over performance of managers.

Performance of host country subsidiary as an economic entity

MNCs often use a variety of criteria for evaluating the performance of the foreign subsidiary. Market share, sales growth, stability in production, asset growth and return on investment are some of these criteria. Out of these, ROI is the most commonly and frequently used criteria, as ultimately the parent's interest lies in the return on its investment.

The ROI, as calculated on the basis of reported profit repatriation, may however be grossly distorted and may not therefore show the true return from the subsidiary. Such distortions may take place due to the following reasons:

- More often profit is taxed in the host country and repatriation of profit may be subjected to further tax. A parent company therefore tries to transfer the money from the subsidiary in many other ways, namely, through high royalty, high interest on loan, high expert fee, etc. Thus the profit repatriation tends to be a grossly understated figure of the true transfer.
- Transfer price is another mechanism through which money may be transferred from the subsidiary to the parent company. By charging higher price on all sales to the subsidiary and by paying lower price on all purchases from the subsidiary, the profit of the subsidiary can be lowered. Consequently, repatriated profit may also be lowered. ROI, based on such reduced figure, may be misleading. Conversely, there can also be a situation when a parent may really want the subsidiary to grow and therefore arrange a transfer price favourable to the subsidiary . In this case the subsidiary may show higher, but still a distorted profit.

Transfer prices may be manipulated in the following situations:

i) When the corporate tax rate in home country is different from that of the host country, it may be necessary to transfer money to the low tax country in order to reduce overall tax liability. Accordingly, profit is shown higher in low-tax country and lower in high-tax country. In such a situation transfer price should be favourable to the company (whether parent or subsidiary) which operates in the low-tax country.

ii) Inflation rates tend to be different from country to country. A high inflation country may run the risk of its currency devaluation as a result of inflation. To avoid the adverse effect of devaluation money may be transferred from high inflation country through a transfer price to the low inflation country.

iii) Sometimes, countries may have restrictions on repatriation of profit. In such cases, transfer of funds may have to be arranged deviously through manipulated transfer price.

iv) Subsidiary companies operating in countries with high import duty may find it convenient to buy at lower price from its parent company so that import duty liabilities are kept at a lower level.

While MNCs try to manipulate transfer price to their overall advantage, governments also try to limit such manipulations through regulations. The Federal Government of the USA, for example, has powers under Sec. 482 of the Internal Revenue Service (IRS) Code to determine the price independently and allocate income between parent and foreign subsidiary so as to reflect the true income of the two companies. Similarly, almost in every country the customs department, which is responsible for administering customs or import duty, may have its own price list for the products which are imported, and duties are assessed on the basis of such prices. Nevertheless, in spite of such precautions, very often prices may be understated in many cases.

- Profit distortion may also take place due to differences in accounting procedures and differences in regulations relating to profit computation. Differences in methods of inventory valuation, depreciation, investment allowance, etc. may make reported profits non-comparable. However, this aspect assumes significance only when a comparison is made between two MNC subsidiaries operating in different countries. In real life, such comparisons are rarely made because it is a well-known fact that procedures widely differ from country to country.
- Further, what is relevant to the parent company is not the *gross repatriated profit* but the net *repatriated profit* representing the true net flow (from repatriated profit). There can be differences between gross repatriated profit and net repatriated profit on account of host country tax on repatriation, withholding taxes, and home country tax on receipt of foreign profit. Thus, in calculating the net repatriated profit these items would need to be deducted from the gross repatriated profit.

Annual and Long run Profitability

For the annual evaluation, net repatriated profit and other receipts such as royalty and interest as a percentage of parent's investment in the subsidiary may be a reasonable indicator of performance. This may be expressed as

$$ROI_{st} = \frac{R_t + U_t}{I_{at}}$$

Where, ROI_{st} = Short terms ROI for period t
R_t = Net repatriated profit during period t
U_t = Other repatriations during period t
I_{at} = Average investment in the subsidiary during period t.

However such a measure would be short term. The true ROI on the other hand should be calculated by taking into account the time value of money and the series of returns including the terminal value. Thus the ROI_L or ROI can be calculated by solving the following equation, and finding out the value of r.

$$C_o = \sum_{t=1}^{n} \frac{R_t}{(1+r)^t} + \sum_{t=1}^{n} \frac{U_t}{(1+r)^t} + \frac{I_n}{(1+r)^n}$$

Where, C_o = Investment in the foreign subsidiary at time 0.

R_t = Net repatriation at time t.
r = ROI
U_t = Net repatriation in other forms at time t
I_e = Residual worth of the subsidiary at the end of nth period.

Thus, it becomes obvious that computation of ROI for a MNC subsidiary is different from and more complex than such computations for a purely domestic division.

Consideration of Risk in Foreign Investment
Any investment involves risk, but investment in foreign subsidiaries may involve many additional risks. These risks can be divided broadly into two categories—economic risks and political risks.

Economic risks
Among the economic risks, most important one seems to be the risk of exchange rate fluctuation. If the host country faces an adverse situation for its currency, leading to devaluation, it may have several ramifications for the subsidiary. For example,

- The product of the subsidiary may become cheaper in the foreign market leading to rise in export sales.
- Imported raw materials become expensive.
- Domestic raw materials tend to become cheaper in terms of foreign currency and thus raw materials get exported. This may lead to a shortage in domestic market, thus causing price rise of raw materials in the domestic market.
- Rise in cost of imported materials and components may induce rise in product cost and thus product price. This may lead to domestic inflation.

Like exchange rate fluctuation, inflation (conversely depression also) also may cause economic risks. If the prices of raw materials, other inputs and throughputs go up faster than the finished goods price, the subsidiary may find its profit squeezed.

Besides, the host country government may take other economic measures which may, directly or indirectly, create risks for subsidiaries. Additional taxes on foreign subsidiaries, exchange controls creating difficulties for flow of funds and restrictions on imports of raw materials and supplies are some of the economic risks.

Political risks
More often, political risks for MNCs turnout to be more important than economic risks. Some of the political risks are:

- Official socialisation of property of the subsidiary by the host country government, such as in Cuba.
- Seizure of property and expropriation without adequate compensation, as was done in Chile.
- Regulations restricting foreign ownership to 40% under FERA, as in India.
- Encouragement provided by host country government to subsidiary employees to strike against the foreign employers.
- Interference by host country government in industrial labour negotiations.
- Provocation to domestic consumers to boycott products produced by multinational subsidiaries.
- Restrictions on entry of foreign managerial and technical personnel.

Different companies follow different approaches to deal with the problem of economic risk. Hedging against foreign exchange fluctuations, linking product price to input and throughput prices, and escalation clauses in contracts are some of the common methods of reducing risk of exchange fluctuations and inflation. As regards political risks, some private insurance companies such as Lloyd's of London cover political risks through appropriate insurance policies. In such cases premiums paid to insurance companies form part of the cost.

Sometimes when the potential for return in host country is high along with high risk of investment, MNCs try to borrow locally as much money as is possible and thereby

limit their own investment. Such a practice helps them in the event of expropriation by host country government to keep their own loss down to the minimal level. Similarly, MNCs also try to transfer as much money as possible in the initial years from the subsidiary, so that their own investments are progressively reduced. This also reduces the risk.

As economic and political risks are ... variety of complex factors, it is difficult to make accurate assessment of such risks. ... MNCs therefore follow subjective methods in judging these risks and take decisions to invest or not to invest. Other companies which favour seizing the opportunity and at the same time like to reduce the risk, use discounted payback period for the project appraisal and emphasize getting back their money as early as possible. Only in exceptional cases MNCs do use sophisticated methods of simulation and probabilistic techniques to appraise with.

Activity 2
Arrange a meeting with an executive of a MNC subsidiary and ascertain information on the following points:

i) What yardsticks the parent company applies for appraising the performance of the subsidiary?

.....

.....

ii) What reports are floated to enable the parent company to assess the performance of the subsidiary as an economic entity?

.....

.....

.....

.....

.....

10.5 MANAGERIAL PERFORMANCE

It has been mentioned earlier that managerial performance is different from unit performance. Some of the reasons for the difference are as follows:

- It may be possible that industrial climate is good, and as a consequence a unit may do well. This does not necessarily mean that the manager also has done well. Conversely, a manager may have put in enough effort, but due to a general decline, a unit may have done well.
- A manager may take decisions on current basis, but his profit may be the result of many decisions taken in the past. For example, heavy capital expenditure committed by previous managers, may reduce current profit through increased depreciation. This does not necessarily imply that the performance of the present manager has been poor or inadequate.
- A manager may not have adequate control over the variables, which contribute to profit. For example, administered prices of products, centralised decisions by head office on cost items, allocated expenses, strong industry norms and market constraints may leave little scope for the manager to increase profit.

In view of these, many times companies try to make explicit distinctions between controllable factors and non-controllable factors. In evaluating unit performance both controllable and non-controllable factors (and, by implication, related costs and revenues) are taken into account, but in evaluating managerial performance only controllable factors are taken into account.

In preparing profit and loss account for evaluating managerial performance the

divisional or unit profit and loss account is taken as the starting point. Based on the criterion of controllability, new items may be included and existing items may be modified or excluded. Controllability of factors may change from situation to situation, and accordingly, a company may develop its own guidelines for inclusion, modification or exclusion of items. However in general, the following ground rules are found to be prevalent:

- Allocated part of head office expenses is included in divisional Profit and Loss Account but not in the Profit and Loss Account for managerial appraisal.
- Non-operating expenses such as interest are deducted from divisional Profit and Loss Account but not from managerial Profit and Loss Account, because in general the financing decision is taken by the head office and not by the division.
- Terminal losses or gains on sale of old assets, decisions about which are not usually taken by divisional manager, are shown in divisional profit and loss account but not in the managerial profit and loss account.
- Sometimes decisions regarding leasehold and freehold property are taken by head office and not by divisional managers. Two divisions, apparently equal in all respects but different with respect to leasehold and freehold property, may show different profit because of differences in leasehold rent and freehold property's depreciation. Further, profitability may also be different because in case of the division which uses leasehold property, the value of leasehold property does not find place in the investment base, whereas in case of the other division with freehold property the value is added to the investment base. Thus the reported profit of the two divisions can be different. However, managers have little control over such situations, and therefore while calculating the profit for managerial performance evaluation, effects of such factors should be eliminated.
- Idle assets in divisions are generally the result of decisions taken by head office or by previous management and *not* by an incumbent divisional manager. Inclusion of such assets in the investment base may unduly pull down the ROI. In order to make the ROI reflect the managerial performance, idle assets are removed from the investment base.

In case of a MNC and its subsidiaries, all the above points become applicable as if the subsidiary is a division of the MNC. Besides, a few more additional points which are peculiar to multinational situation are also considered in evaluating subsidiary's performance as a unit vis-a-vis its managerial performance. They are as follows:

- **Currency fluctuation:** It is generally believed that change in value of currency is beyond the control of managers and therefore while calculating managerial profit the effect of currency fluctuation should be isolated. However, when a manager by his decisions can minimise the effects of currency fluctuations or has an opportunity to gain through currency fluctuations such isolation may not be necessary. Such possibilities can arise when a manager can
  a) borrow in one currency and pay in another.
  b) shift funds to stronger currencies before devaluation
  c) follow pricing policy to protect against exchange fluctuation.
  d) make prior purchases in local currencies
  e) manipulate the capital structure and asset structure to his advantage.
- **Inflation:** Similarly managers have no control over inflation. While this is true in general, a manager can reduce the effect of inflation, through proper hedging, forward contracts with suppliers, price escalation clause on future supply to customers. In such cases the effect of inflation need not be isolated in evaluating managerial performance.
- **Other factors:** Sometimes a MNC subsidiary gets a number of concessions from the host country for bringing in new technology, providing employment, creating training facilities, etc. These factors lead to increase in reported profit. On the other hand, the subsidiary is subjected to excessive tax on repatriation and reported profit. While these factors should be taken into account in calculating the overall performance of the subsidiary, their effects should be eliminated in calculating managerial performance. This elimination is particularly important when the managerial performance of a MNC subsidiary is likely to be compared with managerial performance of domestic units in the same business.

10.6 INFORMATION SYSTEM BETWEEN HOME COUNTRY PARENT AND HOST COUNTRY SUBSIDIARY

System of information flow from host country subsidiary to the home country parent company depends on the type of control that the latter wants to exercise. More often the parent MNCs, being very large organisations, remain satisfied by exercising overall financial controls and permit subsidiary management to operate independently in almost all matters. Such an arrangement which permits autonomy on a wide scale may be further reinforced by the following factors:

1) Subsidiary companies may generally be in such a large number that it may become difficult for MNC management to understand their specific problems.
2) Languages used by the parent company and the subsidiary companies, in most cases, may be different. Hence, parent company, in spite of its best efforts, may often fail to penetrate into the subsidiary's problems.
3) Often, differences may exist between the parent and the MNC subsidiary with regard to accounting procedures and statutes when parent company managers find the reconciliations difficult and cumbersome, they may leave such matters to subsidiary's management which amount to overall autonomy.
4) In very large MNCs, product ranges are so wide and product groups are so many that understanding of the subsidiary products and their problems by the parent company may become really difficult. Parent company in such situations finds it convenient to resort to overall controls.
5) Lastly, inadequate training of subsidiary managers sometimes may make the interaction between parent office and subsidiary may be kept limited only to financial reports.

There are some exceptions to general rule of overall control as follows:

1) When host country subsidiary is a new company or a recently acquired company, the parent company may like to closely monitor the company's activities in order to ensure that the subsidiary follows similar policies as that of the parent.
2) When a subsidiary falters in delivering results, the parent may exercise stricter control and close guidance.
3) When political or environmental turmoil in host country becomes strong, the parent company may exercise close monitoring to ensure protection of its rights and property.
4) When host country subsidiary goes into a totally new business, the parent company may closely monitor its performance to acclimatise itself with the new business.

10.7 REPORTING SYSTEM IN A LARGE MNC

A very large MNC in communications business in the United States having subsidiaries all over the world (such as in Latin America, Canada, Europe, Asia etc.) had a very detailed reporting system involving 16 monthly reports and 12 other quarterly semi-annual and annual reports. The monthly reports covered the following:

- Statement of preliminary net income
- Statement of income
- Balance Sheet
- Statement of retained earnings and changes in retained earnings
- Cash flow statement
- Employment statistics
- Status of orders received, cancelled and pending
- Inter-company transaction statement

- Statement of transactions with headquarters
- Inventory analysis statement
- Receivables analysis statement
- Capital projects status statement
- Capacity utilisation statement
- Statement of operating and financial review
- Report on gains and losses in foreign exchange
- Report on borrowings schedule and repayments

The quarterly, semi-annual and annual reports were basically derived from monthly reports, though they were for a period involving a longer duration.

The MNC ensured, particularly in case of new subsidiaries, that all the reports were regularly submitted. The reports were generally very detailed. For example, the monthly operating and Financial Review Statement ran sometimes to 20 pages or more. Such detailed reporting system showed that the MNC headquarters exercised a very tight control over its subsidiaries.

Activity 3
Meet the executive of an MNC subsidiary and enquire about the linkages, including communication flows, between the parent MNC and the subsidiary.

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10.8 GENERAL DYNAMICS OF SUBSIDIARY OPERATION IN HOST COUNTRY

Many a time control systems for a MNC subsidiary depend on the general dynamics of subsidiary operation in the host country. Host country subsidiaries are often criticised that they are instrumental in siphoning off funds from the host country to the parent company. Many countries have tried to restrict parent company's influence through statutory and regulatory measures, namely, reduction of parent's equity holding in the subsidiary, ceiling on repatriation, restriction on capacity expansion, restriction on operation in low technology areas etc. Sometimes subsidiaries are also required to pay additional tax on repatriated amount. Because of these environmental impressions and difficulties, MNC subsidiaries work very cautiously in their relationship with the parent company so that there is no undue publicity about their ties with the parent.

Many subsidiary companies try to cope with environmental and country conditions in positive ways. They avail concessions from the host country government by bringing in new technology from abroad, by creating new employment opportunity for local people, helping in backward area development and through training local people in new technology and processes. The concessions may also be of various kinds, such as, tax holiday, investment allowance, removal of restrictions on expansion, and exemption from export/import duties. These concessions may of course vary from country to country.

Thus on the whole the control system in MNCs are of a mixed type—having a bright side and a cautious restrictive side to it.

10.9 SUMMARY

Management control over multinational subsidiaries is a difficult task because of the physical distance between the MNC [illegible]quarters and the subsidiary's country office and also due to lack of direct observa[illegible]'s operations by the MNC management. The situation becomes complicated further due to differences in country conditions, fluctuations in exchange rates, varying inflation rates, differences in tax rates, manipulations in transfer prices for technology, products and services, differences in accounting methods, varieties of risks, etc. As a result of these complications, the commonly used methods of divisional performance measurement and managerial performance measurement become unsuitable for MNCs. For control system in MNCs to be effective, these complications are taken into account and the general methods of measuring divisional performance and managerial performance are suitably modified. Besides, depending on the type of control that the MNC parent wants to exercise, the information and reporting system may also be di[illegible]

10.10 KEY WORDS

Currency fluctuations: Fluctuations in foreign exchange rates

Divisional performance: Performance of a division as an economic entity.

Economic risks: Risks relating to the economy which may lead to loss of current earnings and/or capital.

Global Corporations: A company which produces and distributes its productions on global efficiency considerations by using the theory of Comparative advantage.

Global and regional pull factors: Factors favouring centralised facilities and factors favouring dispersed autonomous facilities, respectively.

Host country: The country in which the subsidiary company operates.

Home country: The country in which the parent company's headquarters is located.

Language barrier: When two organisations (say MNC parent and MNC subsidiary) use different languages for their own communication.

Multinational corporation: A company which disperses its production and marketing activities to different countries and conducts these activities through subsidiary companies.

Managerial performance: Performance of a manager consistent with his efforts.

Political risks: Risks relating to the political environment which may lead to loss of current earnings and/or capital.

Risk coverage: Provision for risk reduction through insurance policy, hedging or other mechanisms.

Tight control: A control system which involves close monitoring on a variety of detailed items.

Transfer price: Price at which products are transferred between units within a company.

10.11 SELF-ASSESSMENT QUESTIONS

1) What is the conceptual difference between an MNC and a Global Corporation? Can you identify some large corporations and classify them into these two categories?

2) What are the factors which make evaluation of an MNC subsidiary as an entity more difficult than evaluation of a domestic division of an Indian Company?

Explain how you would take into account these factors and build an indicator for such evaluation.

3) Explain the reasons for manipulation of transfer prices by the MNCs and their effects. What steps can be taken to prevent such manipulation and why?

4) What is economic risk? What can a manager in an MNC subsidiary do to minimise the effect of economic risk?

5) What is political risk? What kind of steps are taken by parent companies and their subsidiaries to cope with high political risk situation?

6) What is the rationale behind managerial performance evaluation and evaluation of a subsidiary as an entity? What are the factors which contribute to the difference between the two evaluation systems?

7) Explain the general dynamics of control over subsidiaries by an MNC parent and how these affect the management information and reporting system?

10.12 FURTHER READINGS

Coborn, David L. and Joseph R. Ellis, November 1981, "*Dilemmas in MNC Transfer Pricing,*" Management Accounting.

Shapiro, Alan C., Spring 1978, "*Capital Budgeting for Multinational Corporations,*" Financial Management.

Tang, Roger W., C.K. Walter and R.H. Raymond, January 1979, "*Transfer Pricing—Japanese Vs. American Style,*" Management Accountant.

UNIT 11 MANAGEMENT CONTROL IN PROJECT AND MULTI-PROJECT ORGANISATIONS

Objectives

After studying this unit, you should be able to understand:

- why a control system has to be different for projects and project organisations from rountinely divisionalised organisation
- how various techniques of project control are used
- the desirability of different types of organisational structures for project organisations
- how to design critical result areas for control of functional activities in head office of a multi-project organisation.

Structure

11.1 INTRODUCTION

Project implementation is a very important activity in any organisation. Through effective project implementation organisations ensure that their resources are optimally employed for achievement of their objectives. Any inefficiency or slackness in project implementation can lead to time and cost over-runs and also in slippages in the quality of the project work. These may ultimately result in loss of further opportunities and a decrease in project profitability. The situation may get further aggravated due to accumulation of interest and cost escalation as a result of inflationary factors.

To guard against such dangers, it is necessary for every organisation to evolve or develop proper control systems for its projects. The control system should take into account the characteristics of the projects, technology and skill of the people. Besides an understanding of what constitutes progress in the context of the specific project it can be helpful in designing the parameters of progress. Control system should also provide mechanisms for comparison of actual progress with planned progress at various stages in terms of time, cost and quality. Any deviation should be properly analysed to find the reasons for deviation based on which management should take remedial actions as and when necessary.

11.2 PROJECT DEFINED

A project may be defined as a set of activities intended to deliver some predetermined and results. When a project is large, it may be divided into a number of sub-projects which in turn may consist of several activities. All projects or sub-projects have both time and cost dimensions.

Projects may be of different types. In industrial situations we generally come across diversification projects, capacity expansion projects, replacement projects, maintenance projects, cost control projects, R&D projects, etc. All these projects by their very nomenclature explain, to a certain extent, the end results expected of them. In a non-industrial situations such as government and non-profit organisations, a variety of projects is also found to exist. Irrigation projects, multi-purpose river valley projects, rural development projects, hydro-electric projects, building projects and rehabilitation projects are some of the very common examples. There are also social and community projects like project for a national festival, project for establishing a school or a club and a project for disease control.

11.3 PROJECT CHARACTERISTIC AND MANAGEMENT CONTROL

A management control system in a project organisation can be very different from a control system in a manufacturing organisation. This is because of certain specific features of projects and project organisations as discussed below.

- An ongoing organisation involves primarily routine and repetitive activities whereas a project involves diverse and dissimilar activities. A control system which caters to dissimilar activities at different stages has necessarily to be flexible.
- Often projects are located away from head office and are put under the charge of a project manager. He is given adequate authority so that he is in a position to take quick decisions in emergency situations.
- Projects during construction do not show any visible final output, nor profit (unless it is a turnkey project, which may show profit for the turnkey contractor) while results of an ongoing organisation can be shown through profit or loss. Thus, performance during project implementation is measured through work progress and cost.
- Control system in projects cover all functional areas and are therefore integrative in nature.
- Control system for projects is usually based on stage-wise completion and not on volume.
- Project's resources such as manpower, equipments and funds may be drawn from other projects, head office or outside sources for specified periods, thus creating a need for cross-project coordination. This makes project monitoring and control relatively more complex than in a simple manufacturing unit having its own permanent resources.

11.4 A TYPICAL PROJECT ORGANISATION

A typical project organisation consists of a number of operating executives and functional executives in addition to support staff. The operating executives include the General Manager (Project) or GM(P) himself and a number of other technical people with similar skills as his own, such as Manager (Project Operations) Manager (Maintenance), and Manager (Contracting). Manager (Project Operations) is in charge of direct supervision of the core project work whereas Manager (Maintenance) takes care of plant and equipment maintenance, replacement, transport maintenance and similar activities. Many times some of the tasks relating to

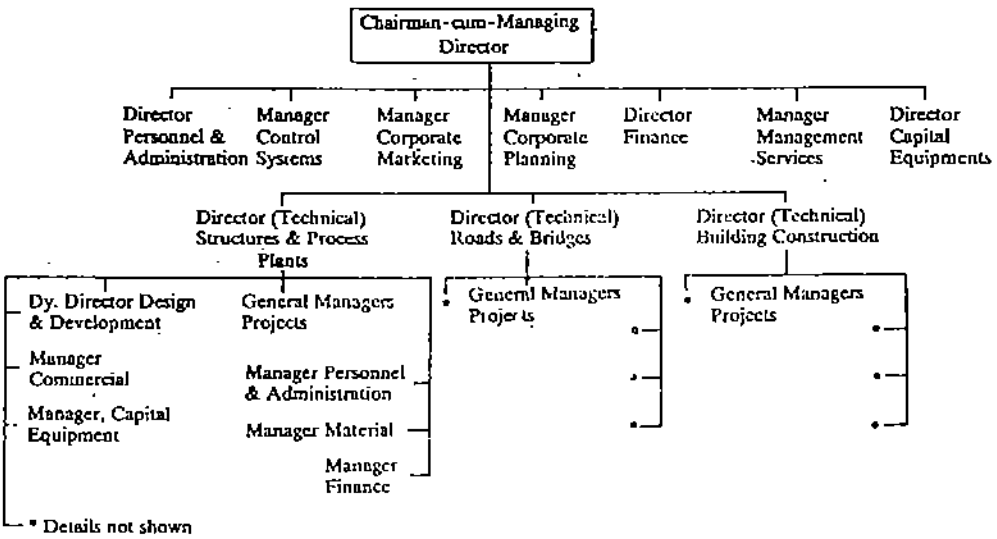
the projects are contracted out either because of the unavailability of proper skills within the project to accomplish such task or because such task can be completed at a lower cost by outsiders. To negotiate with the outsiders and to do the follow-up with them in regard to quality, delivery schedule etc., a position of Manager of Contracting becomes necessary.

The functional managers who work under [illegible] erally are Manager (Personnel), Manager (Finance), Legal Officer, etc., Organis[illegible]nally, GM(P) being head of the project, is responsible for getting the project completed within allocated time and money and these functional officers are supposed to take orders from the GM(P). Unfortunately, however, these functional officers who work under him inwardly tend to show greater allegiance to their functional bosses in the head office instead of to the GM(P). This is more so when the functional officers know that their postings with the projects are for a short duration and their career growth depends primarily on their long-term relationship with their functional bosses in the head office. Thus a GM(P) is continuously faced with a crisis of doubtful allegiance in relationship with his subordinates.

11.5 STRUCTURE OF A MULTI-PROJECT ORGANISATION

Many times we come across multi-project organisations. National Building Construction Corporation Limited, Hindustan Steel Works Construction Corporation Limited, Engineering Projects (India) Limited are some of the examples of purely multi-project organisations in the Indian public sector. Typical Multi-project organisations have a head office consisting of senior managers in addition to separate staff structures for projects. The organisation chart of multi-project organisation (as it existed in 1984) is shown in Figure 11.1

Figure 11.1: Organisation Chart of a Multi-Project Organisation



Chairman cum Managing Director (or CMD) is the chief Executive of the company. The company undertook only three types of projects—viz., structures and process plants, roads and bridges, and building construction. The three types required different types of engineering skills and competence and thus were put under three Directors called Director (Technical-Building Construction), Director (Technical-Process Plants) and Director (Technical-Road Construction). While the total organisation was an investment centre, these three Directors headed profit centres. The projects were cost centres and the GM(P) was evaluated on the basis of cost.

The rationale for having such profit centres and cost centres does not become apparent at the first instance, but it becomes clear when we closely examine the issues. For example, why is it that a project becomes a cost centre while projects actually earn profits for the company? To answer the question we must examine the authority structure in the organisation and the process of project selection.

In the multi-project organisation which has been referred to above, the CMD was responsible primarily for policy decisions relating to the types of projects the company should handle: sources of finance, investment in capital assets, etc. However, since he was the head of the organisation which was intended to run efficiently and earn profit proportionate to investment, he was naturally heading an investment centre. The CMD was not involved in bidding for specific projects, their pricing, cost,etc. The Director (Technical-Building Construction) had to decide whether bidding should be done for a sixth project or not. Similarly, quotation price of a new project was also determined by him. Given the package of assets the Director (Technical-Building Construction) decided how to manage these resources and schedule different building projects so that the available resources are best utilised. Quotation prices and costs were also determined by him. So he was naturally held accountable for the whole project. This was not so in case of GM(P) who played no role in project cost price determination. He started playing his role only after the project was taken up, and his role briefly was to complete the project within the cost parameters and the time. Thus he was accountable for cost only and therefore he headed a cost centre.

Activity 1
Describe the organisation of the project (or projects) undertaken (or are being currently undertaken) by your organisation/institution, including the roles of the various individuals associated with the project (s) and the reporting relationships. Also draw an organisational chart.

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11.6 GENERAL APPROACHES TO DESIGNING PROJECT ORGANISATIONS

General approaches to designing project organisations are based on the issues of autonomy and flexibility. In general a GM(P) should be as autonomous as possible to handle the project affairs on his own and at the same time flexible in terms of keeping his options open regarding staffing, resources etc. Taking these considerations into account, several types of project structures, as given below, can be designed.

Completely Projectised Management: This involves providing to a GM(P) almost all authority needed by him. The project organisation becomes like an independent organisational entity. Functional managers become totally accountable to GM(P).

Partially Projectised Management: In this case the project may leave its own operating staff, but for the functional activities it depends on the functional organisation located centrally, which responds to the project requirement. The salaries of the functional people who provide their services to the project are charged to the project payroll. They, however, remain basically accountable to their functional bosses.

Functionally Biased Matrix Organisation: In a matrix organisation, the managers have dual accountability--that is, towards the GM(P) and to functional bosses in central office. When the functional officers have strong relationship with the functional

bosses, relative to the GM(P), the organisation becomes functionally biased. Such organisations tend to ensure quality of work but may fail on meeting the delivery schedules.

Project Biased Matrix Organisation: This type of organisation is similar to the one described above (Functionally Biased Matrix Organisation) except that the functional officers have strong relationship with the GM(P) instead of with their functional bosses. Such an organisation may ensure delivery time and needed volume but may not ensure quality of work.

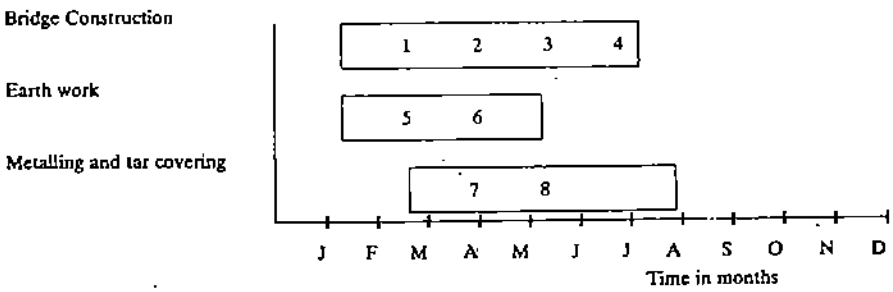
Task-Force Organisation: A project task-force organisation is formed by drawing personnel from different parts of the main organisation who work on full time basis or priority basis on the project. In this case they generally receive their administrative support from the main organisation. A task force organisation is extremely flexible, but its autonomy of character may be seriously suspected.

11.7 PROJECT PLANNING AND CONTROL TECHNIQUES

Several techniques are known to be used for project planning, monitoring and control, but three are very popularly used. These are Gantt Chart, Programme Budget technique and Network technique.

Gantt Chart: Gantt Chart is a simple technique of showing through horizontal bar graphs, the starting time and completion time of different activities in a project. Further each activity is broken up into different phases in which starting of a phase depends on the completion of the previous phase. In Figure 11.2 a simplified version of a Gantt Chart relating to a road project is shown.

Figure 11.2: Gantt chart relating to a Road Project



The chart shows that there are three distinct activities, namely, bridge construction, earth work, metalling and tar covering, which are planned for different period. The actual progress can be marked side by side to show whether actual progress has been as projected or not. As regards dependence within an activity Gantt Chart provides a reasonable picture, but it does not show the dependence of one activity (or stage of activity) on another. For example, in this case the metalling and tar covering activity would possibly be started only after certain earth work is completed, but such conditions are not revealed. However, inspite of such weaknesses of Gantt Chart, it is a very popular method of project monitoring and control, because it is simple and probably understood by most people.

Programme Budgeting: When a project is in the implementation stage, but not yet commissioned, Programme budget technique comes handy in monitoring programme of project. The method basically approaches the problem by breaking up the project into several work units and establishing expenditure norms for such work units. If the previous example of road construction is taken, the work could be divided into components of pure earth work, concrete work, metal work, etc. Pure earth work and concrete work can be measured in units of cubic metres whereas metal work in cubic metres or square metres. The cost norm for cubic metres or squaremetres of work may also be established.

Control under programme budget is done by comparing the actual physical performance (in terms of work units) with planned expenditure. The following formula is used as the basis of control. If the conditions in the formula are fulfilled the project is assumed to be satisfactory.

1) $\frac{\text{Actual physical work done by time X}}{\text{Physical work planned by time X}} \geq 1$

2) $\frac{\text{Actual work done}}{\text{Work planned}} \geq 1$ s.t. actual expenditure $\leq$ budgeted expenditure

3) $\frac{\text{Actual work done}}{\text{Actual cost}} \geq \frac{\text{Budgeted work}}{\text{Budgeted cost}}$

The first formula considers only the work done vis-a-vis plan and therefore it measures only the effectiveness of progress. It does not take into account the resources used for doing such work. Thus it fails to reveal the efficiency in resource utilisation.

The second method overcomes this problems, but not fully. It shows the effectiveness of progress, but not the degree of effectiveness. Similarly, it indicates that resources are used within budget limit, but fails to indicate the degree of efficiency in resource utilisation.

The third formula primarily emphasizes efficiency in resource utilisation. Because of its format of output input or productivity ratio, it appeals to the user and is therefore commonly used for control.

In addition to the above three formulae, sometimes a ratio called project status index is also used for monitoring progress. This index takes into account both time and cost dimensions and combines them to find an overall measure of progress.

$$\text{Project Status Index (PSI)} = \frac{\text{Actual work done by time T}}{\text{Work Planned upto time T}} \times \frac{\text{Budgeted Expenditure}}{\text{Actual Expenditure}}$$

Suppose a project should have been completed to the extent of 80% by a specified time but is actually completed to the tune of 60%. Similarly the budget was Rs. 1 lakh while actual expenditure is Rs. 80 thousand, then

$$\text{Status Index} = \frac{60}{80} \times \frac{100}{0.80} = 0.9375$$

The status index of 1.0 indicates 'par'; more than 1.0 indicates that progress has been better than expected on the whole; and less than 1 indicates unsatisfactory progress. PSI is somewhat mechanical, but is extremely useful method for ranking different projects in terms of their overall progress.

So far we have discussed about only time and cost. As mentioned earlier quality of work in a project should also be measured if proper control is to be exercised. Sometimes if quality is bad or poor either compensation has to be paid or some amount of rework has to be done on customer complaint. In either case, extra expenditure is incurred. If this expenditure is high in relation to total project's value it indicates that quality of work has not been satisfactory. A Quality index can be computed:

$$\text{Quality Index} = \frac{\text{Cost of rework + Compensation due to poor quality}}{\text{Value of project}}$$

Thus the indicator can serve a very useful purpose.

Similarly counting of failure during trial-run can provide some indications about quality. The following ratio for every part of project can show how well the part of the project has been executed.

$$\frac{\text{Number of successful trial-runs}}{\text{Total number of trial-runs}}$$

Besides these other indicators of quality can also be devised depending on specific project needs.

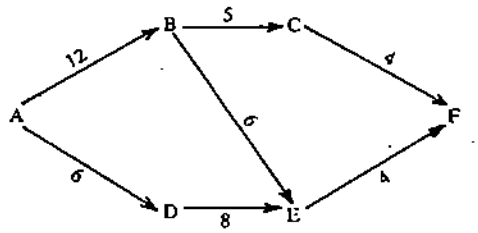
Network technique (PERT): Project planning and control through Programme Evaluation and Review Technique (or PERT) is a very common phenomenon today. Under this method a project is divided into a number of activities and the time requirement for these activities as well as relationship between the activities are analysed and their precedence established. These activities are drawn on a chart called PERT chart. On a PERT chart an activity is represented by an arrow. The starting and completion points of an activity are known as 'events' and marked by circles. Suppose a project consists of seven activities with implementation as given in Table 11.1

Table 11.1 Time Requirement of Activities

Activity	Preceding Activity	Time requirement in months
A–B	––	12
B–C	A–B	5
A–D	––	6
D–E	A–D	8
B–E	A–B	6
C–F	B–C	4
E–F	B–E and D–E	4

The PERT chart indicating the above activities and timings is shown below:

Figure 11.3: PERT Chart of Project X



As indicated in the information, the chart shows B–C activities only after completion of A–B activity, and D–E after completion of A–D and so on. Now, how long should the project take to complete? It becomes obvious for the chart that there are three parts or chains of activities and time taken by these paths are different as shown below:

Path A–B, B–C and C–F: 12 + 5 + 4 months = 21 months
Path A–B, B–E and E–F: 12 + 6 + 4 months = 22 months
Path A–D, D–E and E–F: 6 + 8 + 4 months = 18 months

Out of these three paths, the path A–B, B–E and E–F takes the longest time (22 months) and therefore the project will take at least 22 months for completion. The path A–B, B–E and E–F is known as the critical path. Critical path can be shown in bold line.

The knowledge of initial path and project completion time is only the starting point. A project manager may be interested in knowing the activities, on which he cannot afford to delay. In this case no delay can be afforded on A–B, B–E and E–F activities, because any delay in there activities will extend the project completion time. On the other hand on A–D, D–E, B–C and C–F activities some delay can be tolerated, or technically expressed, there can exist some 'slack' in these activities.

Earliest slack can be calculated through latest start time for each activity. For any activity the difference between the earliest and latest starting time will indicate the slack. A–B, B–E and E–F fall on the critical path and there can be no slack for these activities, but other activities (namely, AD, DE, BC and CF) may have some.

Now let's consider the activities A–D. What are its earliest start and latest start times? If we fix the project starting time as O, A–D having no preceding activity can

well start at O. So time O is its earliest start time. Regarding latest start time, we know that the project will take 22 months and we can work backward on the Path A-D, D-E and E-F to find out when the work A-D should start at the latest. As the three activities together take 18 months (6+8+4) the latest A-D should start would be 4 months. In a similar manner, the earliest start time, the latest start time and slacks for all the activities can be calculated. The results are shown in Table 11.2.

Table 11.2: Start Time and Slacks

Activity	Earliest Start	Latest Start	Slack
A-B	0 months	0 months	0 months
A-D	0 months	4 months	4 months
B-C	12 months	13 months	1 months
B-E	12 months	12 months	0 months
D-E	6 months	10 months	4 months
C-F	17 months	18 months	1 months
E-F	18 months	18 months	0 months

It may be pointed out that the slacks indicated here are not necessarily additive. For example for activities A-D and D-E we cannot say that slack available is 4+4=8. In fact, the total slack available on the path (A-D, D-E and E-F) if four months only and if during implementation A-D uses up this slack, no slack may be available for D-E. The same is the case with activities B-C and C-F which together have a slack of 1 month.

The above description of PERT takes into account only the time dimension and therefore is known as PERT-TIME. Better results are achieved when this is integrated with the cost dimension. By integrating the two, management can optimally evaluate the cost-time trade-offs.

The cost-time trade-off works under the assumption that every activity has a normal time of completion and sometimes it can be completed at a reduced time provided more resources are deployed. Thus an activity involves normal time and normal cost and reduced time (or crated time) and increased cost. The management now is in a better position to decide whether reduction in activity time and therefore in project time is worth the cost increase.

In the given example, the normal duration of the project as given is 22 months. Let us further suppose that if it is completed in a lesser duration, it can generate profit of Rs. 4 lakh per month during that reduced period. It is also estimated that the only activity for which time reduction is possible is the activity A—B and the estimates are as follows:

Activity A-B	Time	Cost
Normal	12 months	Rs. 10 lakhs
Crash 1	11 months	Rs. 13 lakhs
Crash 2	10 months	Rs. 18 lakhs

It is seen from the above data that by reducing A-B time by one month, the management gets a profit of Rs. 4 lakh and incurs an additional cost of Rs. 3 lakh (Rs. 13 – Rs. 10 lakh). Hence the reduction in time is desirable. However following the same logic further crashing should be avoided because for the second crashing cost increases by Rs. 5 lakh while profit increase by Rs. 4 lakh only. (The example has been kept simple in order to make the profit about crashing clear. In a real life situation there can be other complexities involving time value of money, profit life etc., which can be adjusted in the model.)

Apart from the above PERT helps management in getting better understanding of scheduling problem. If there are parallel activities having slacks and requiring certain constrained resources the activities can be scheduled in such a manner that one activity can start earlier and the other late so that constrained resources (such as equipment) may be better utilised. In addition to understanding of activity time, resource requirement, slacks have led to developement of several resource allocation rules such as,

- Allocate resources to the activity having the least slack,

- When two activities have equal slacks, allocate resources to the activity having longer direction
- If two activities require different resources, allocate additional resources to the activity which requires larger amount of resources. All these rules, no doubt, are extremely useful to all management in improving the quality of decisions.

Activity 2

What specific tools or techniques have been used (or are being used) for administering and controlling the project undertaken by the organisation with which you have been associated? Describe them briefly. State how these tools/ techniques have helped the organisation. What other tools/ techniques, you think, could have been used?

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11.8 SUB-CONTRACTING AND CONTROL

In almost all large projects, some parts of the work are sub-contracted, either because the organisation may not have in-house skill and competence to do such work or because the cost through sub-contracting turns out to be lower than that of getting it done in-house. However, it is also found that improper attention to the process of selecting sub-contractors may lead to serious problems. Lack of experience, lack of skill and resource, inadequate appreciation of sub-contract requirements and difference in terms of wave length of understanding with the sub-contractors may lead to delay in completion of the projects. Not infrequently disputes between the sub-contractor and the project authority are sought to be resolved either through arbitration or court cases. There is no doubt that in such circumstances, time and cost over-runs become inevitable.

In view of the above possible hazards, the GM(P) must assure himself, while selecting a sub-contractor, that the sub-contractor will be able to:

i) deliver in time
ii) deliver within cost limits and finally
iii) deliver to quality specifications.

In reality, however, to judge the ability of sub-contractor on all the above three fronts directly is not an easy task. The GM(P) may depend on the following information relating to the sub-contractor to form some broad impressions about the sub-contractor.

1) Whether the sub-contractor's project manager has adequate control over funds to meet the sub-contractor needs.
2) Frequency of slippages versus schedule on past projects undertaken by the sub-contractor.
3) Frequency and extent of over-expenditure on past projects by the sub-contractor.
4) Requests made previously to revise technical specification.
5) Demands for higher funding as seen from previous requests versus actual expenditure.
6) Evasiveness to information wanted by GM(P).
7) Unrealistic forecasts and estimates, as found through comparison with subsequent experience.
8) Sub-contractor's knowledge about prime's project organisation, its personnel,etc.

Regarding control over sub-contract progress, there is really no one way of dealing with the issue. It is however generally agree that in order to avoid slippage, there should be a system of continuous monitoring of sub-contract progress. The following steps may help in building a lasting relationship with the sub-contractor.

1) Make the sub-contractor feel as if he is a part of the prime's team. Allow him to participate in project review meetings.
2) Inform him in clear terms about project objectives, his role, and how critical is his part in the project.
3) Let him know when he does a good job and when he does not.
4) Establish controls for sub-project, if the sub-contractor is unable to do that himself.
5) Provide the sub-contractor any help he requires.
6) Make it clear that sub-contractor's future relationship with the prime will depend on how he performs now.

As regards specific measures of sub-contract performance, similar methods as explained under GANTT chart, programme budgeting & network analysis may be used, even though at a lower scale.

11.9 CONTROL INDICATORS IN MULTI-PROJECT ORGANIZATIONS

In a previous section, we made an attempt to develop suitable measures of control for projects, but not for the central office of the multi-project organization, except in a very limited way such as profit centre for Directors (Technical) and investment centre for the CMD. In any multi-project organisation apart from CMD and Directors (Technical) we find a number of other Senior Executives in the central office for whom generally no control system is designed. However, if these executives work efficiently, they help in the success of projects. Their inefficiency may create difficulties in the progress of the project. A few examples of how projects can run into problems due to central office negligence are given here.

1) Major capital equipment purchases or leasing are generally handled by central office (say the office of Director-Capital Equipments) and supplied to the projects. If essential equipments are not supplied in time, the project's work may be held up.
2) Recruitment, training and placement of manpower are generally controlled by the central office. If the central office fails to provide to a project the right kind of staff and at the right time, the project may suffer. Due to improper staff, the quality of work may be poor, and cost may be high. If staff are not posted in right time, the completion time may get extended.
3) Finances for projects are also arranged centrally through the office of Director (Finance). Project may get delayed if funds are not provided in time. Working capital shortage may adversely affect the progress of project in many ways.

It is in view of these and many other similar possibilities that a multi-project organisation in order to be successful, should have the control system designed not only for the project manager (or GMP) and Director (Projects), but also for other senior executives in central office who contribute to project progress. For these senior executives, it may not be possible to measure performance in terms of ROI, profit or cost, but by some kind of other physical or financial indicators. Some of these indicators which are used for such control are given below:

Indicators of Performance

Director of a project division	1) Gross profit of the division − cost of capital 2) Value added: Throughput cost (i.e. wages and salaries + depreciation + chargeable overheads)

	3)	Number of projects with time overrun / Total number of projects in hand
	4)	Average time overturn / Average estimated time as per network
	5)	Cost of rework + compensation due to poor quality of work / Value of projects completed
Director (Personnel)	1)	Mandays lost due to deficient manpower planning / Total mandays estimated for projects
	2)	Number of litigations/disputes relating to personnel administration / Total number of personnel employed
	3)	Number of executives internally promoted / Number of executives promoted internally + executives recruited from outside.
Director (Finance)	1)	Weighted average cost of capital
	2)	Interest cost / Total cost of project
	3)	Cost of raising capital
	4)	Delay in project completion due to funds shortage
Director (Capital Equipments)	1)	Utilisation rate of major capital equipments
	2)	Lease rent + Depreciation + Interest on Investment in capital assets / Total cost of projects
	3)	Average discount obtained on list prices on capital equipment purchased.

In the above manner performance indicators can be developed for other positions, namely, Purchase/Procurement Manager, Manager (Legal), Manager (Management Services), Manager (Marketing),etc.

Activity 3

Study the working of the Postal circle nearest to you and explain how public contact characteristic is built into the control system design.

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11.10 ROLE OF REVIEW PROCESS

The design of the above indicators should not give an impression that these can be straightaway applied to draw conclusions about a certain persons being efficient or inefficient. The indicators provide a starting point only for diagnosis. If profit for a project division is inadequate or has fallen short of budgeted profit, the reasons should be analysed. It is quite possible that shortfall may be due to purely external factors beyond the control of the Director of the project division, and therefore he could not possibly be held responsible. In order that the indicators are not used

rigidly to the detriment of the review process, certain precautions should be observed.

1) Indicators should be used as guide posts for diagnosis and not as straight jackets.
2) Process of review should aim at 'helping' rather than finding a scapegoat.
3) Figures are helpful, but they should not be used to replace judgement.
4) Process of review and diagnoses is a long-drawn process and success of this process depends on continued and persistent involvement of all executives involved in the work.

11.11 SUMMARY

Control system for projects and multi-project organizations have to be necessarily different from routinely divisionalised organizations because of several reasons. Projects involve dissimilar and diverse activities, do not show visible final output in short run and depend greatly on central office support in many respects. These characteristics of project situation make project control system to a certain extent complex.

For proper management control in project organisation, optimality of project organisation is an essential requirement. Depending on situational requirements, different forms of organisations are used for projects. Some of the most popular forms are completely projectised management, partially projectised management, functionally biased matrix, project biased matrix and task-force organisation.

Various methods of planning, monitoring and controlling projects are found to be in use in real life. Gantt chart, programme budgeting and network techniques are some of the well-known methods. The last method is particularly useful in controlling time and cost overruns and in resource allocation.

Sub-contracting is a key area in project management. Choosing proper sub-contractor and proper control over his activities are essential for proper progress on contract.

Designing proper result indicators for measuring performance of projects and also the performance of key functional executives in central office is also important. Such designing should be done after taking into account the criticality of such result and controllability over such results. The monitoring and review process should also be consistent with the objectives of control, organisational structure and the control process.

11.12 KEY WORDS

Crashing: Process by which time and costs are adjusted in order to achieve the desired cost and time goals.

Cost/Time overrun: Excess cost or excess time taken than budgeted.

Critical Path: In a PERT chart the path which requires the longest time for completion.

Gantt Chart: A kind of bar graph showing starting and completion time of different projects.

Matrix Organisation: A structure in which managers have dual accountability such as to the line boss in respect to operational work and to the functional boss in the matter of application of functional rules and guidelines.

PERT: Programme Evaluation and Review Technique.

Programme Budgeting: A budgeting system in which budget outplay is related to distinguishable segment of work.

Project: A set of activities intended to deliver some predetermined end results.

Projectised Organisation: An organisation in which the General Manager of a project is provided with every authority needed by him.

Slack: The difference between the earliest and latest starting time for any activity.

Status Index: An index to show the efficieny in project progress and is based on actual and budgeted cost, and actual and budgeted progress.

11.13 SELF-ASSESSMENT QUESTIONS/EXERCISES

1) What are the characteristics of a project organisation? Explain how these characteristics affect the control system design of a project.
2) Suppose you are considering construction of a one-storey residential house for yourself. List out the main activities, precedent activities and time requirement for these activities. Draw a PERT chart and identify the critical path.
3) What are the relative strengths and weaknesses of a functionally-biased matrix and a project-biased matrix?
4) Explain what you understand by programme budgeting. How is it different from performance budgeting?
5) Explain the weaknesses of Gantt chart as a technique of project control.
6) Suppose you are hired to design an information system for monitoring the progress of a multi-purpose river valley project. How will you go about the task?
7) If a project (under construction) is treated as a profit centre, what are the difficulties in operationalising a control system? How would you overcome such difficulties?

11.14 FURTHER READINGS

Sharma Subhas, 1988, *Management Control Systems,* Tata-McGraw-Hill: Bombay.

Maciariello Joseph, 1984, *Management Control Systems,* Prentice-Hall: Englewood Cliffs.

Ranganathan N., 1980, "Physical & Financial Monitoring of Projects", *Decision,* Vol. 7, No. 1.

Deol S.P.S., 1988, *Project Follow-up,* Development Banking Centre: New Delhi.

Cleland D.I. & William King, 1968, *Systems Analysis & Projects Management,* McGraw-Hill: New York.

Mohsin M., 1983, *'Project Planning & Control,* Vikas Bombay.

Prakash, Ram, 1983, *'Project Organisation—A Redesign',* Lok Udyog.

UNIT 12 MANAGEMENT CONTROL SYSTEM IN SERVICE ORGANISATIONS

Objectives

The objectives of this unit are to:

- familiarise you with the special characteristics of service organisations.
- explain various categories of service organisation.
- enable you to appreciate how these characteristics and categories lead to certain control system designs.
- enable you to understand the special nature of control system in specific service industries.

Structure

12.1 INTRODUCTION

In our everyday life we buy a number of products and services to meet our requirements. In case of a product, we can generally see its shape and size, feel it and measure it quantitatively. Products are also generally tangible. On the other hand, services have neither shape nor size, and hence quantitative measurement becomes difficult. Services are intangible. Services are judged primarily on qualitative basis, though gradually attempts are being made to overcome this problem and find, at least for some services, measures of quantification.

Services pose another problem also. Service sector is so diverse in nature that coming up with managerially useful generalisations for varieties of services becomes difficult. This creates a serious obstacle in designing control systems. Thus, control system design is generally not made on consideration of general characteristics of service sector, *but* on the basis of the requirements of specific service organisation.

The types services we require from time to time are numerous. Banking services, professional services like tax consultation, medical consultation, management consultancy, financial consultancy,etc., hotel services, transportation and domestic household services are some of the examples of the types of services.

12.2 CHARACTERISTICS OF SERVICES

Services in general may have the following four major characteristics:

i) Services are generally tailored to the needs of a customer. Thus, a service output is unique and individually tailored.

ii) Services often require continuous contact with the client system.

iii) The production and delivery of services are inseparable or, in other words, services produce little scope for storage and delivery at a later date.

iv) Finally, all services involve professionals.

It is true that some services fulfil these characteristics more than others. Take, for example, the case of a psychiatric therapy. A psychiatrist provides individually tailored help to the patient. He is in continuous contact with the patient. Diagnosis and help come almost simultaneously. A psychiatrist is a well-qualified professional, and he uses his professional competence and skill in offering his services to his client. On the other hand we sometimes come across services which do not fulfil the above characteristics with the same intensity. Take for example the general banking services. The services are generally standardised, and only in the rare cases custom-made. Contact may not be continuous and professionalisation may not also be any substantial order.

In addition to the above four characteristics, service may also have some minor implied characteristics as follows:

1) Service cannot be stored and if services produced today cannot be immediately sold, the revenue from such service is lost.

2) Services are relatively more labour intensive and therefore control becomes more difficult.

3) If a manufactured product is defective, it can be replaced, but a service once provided cannot be replaced. Therefore control over the quality of service must be ensured while the service is being offered, *not* later.

4) In order to provide personalised service, service organisations generally tend to remain small. As a result they find informal control systems to be adequate for their needs. There are, of course, some exceptions to this general rule such as airlines, railroads which may have large organisations.

Activity 1
Take the case of any service organisation you are familiar with and evaluate its major and implied characteristics in terms of high, medium and low ranks.

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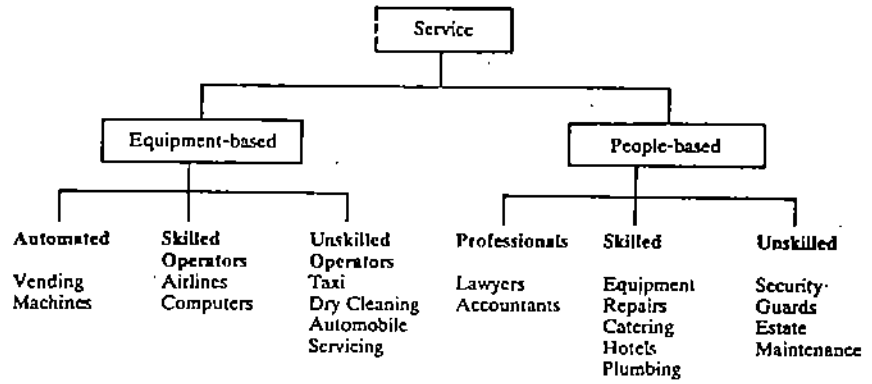
12.3 EQUIPMENT AND PEOPLE ORIENTATION IN SERVICES

Services may be equipment-based or people based. Equipment-based services include airlines, transport services, vending machines, dry cleaning, computer, etc. Some of the equipment-based services may require highly skilled operators such as pilots in airlines, programmers in computers while other services require relatively unskilled operators like in any dry cleaning, car wash, etc. We also find that some equipment-based services may be automated, and thus may not require any operators. The vending machine may be an example in this category.

Services, which are people-based, include legal services, household services, security services etc. Like equipment-based services these may involve varying degrees of professional skills. On the one end there may be legal services provided by lawyers, and taxation/accounting services provided by Chartered Accountants which involve high degrees of professional skill. On the other end there may be almost unskilled professionals like household helps, security guards, etc. Between these two extremes, there are services which involve relatively greater skill like various repair services, hotels, restaurants, etc. This schematic classification is shown in Figure 12.1:

Figure 12.1: Classification of Services



The classification of service based on equipment and people is important for management control system design. In an equipment-based service, control system is designed with an objective of ensuring efficient use of equipment and everything else is adjusted to this key aspect. In case of people-based service, it is the professional time use and quality of work which become relatively more important and control system is designed to monitor these critical factors

Activity 2
Make an inventory of control system design variables and show their relative importance in equipment-based and people-based organisations.

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12.4 DESIGN CONSIDERATIONS IN HIGH AND LOW CONTACT SERVICES

It has been mentioned earlier that services generally involve personal contact with clients, but such contacts may be very close and continuous or relatively discrete and occasional. Some of the high contact and low contact services are given below:

High Contact Services	**Low Contact Services**
Health Services	General Banking Service
Hotels and Restaurants	Data Processing
Schools	Post Office
Personal and Domestic Services	Computer Companies
Fire Service	Warranty and Insurance Services
Transport Service	

In case of high contact services, building up a lasting relationship with the client is the key to success. The frequency of contact and the strength of relationship are measured on the basis of the number of calls made, duration of time spent with clients, types of business discussed, repeat business, client-wise profitability, etc. Management control in such cases are designed around clients and such measurements. In advertising business, specially in banking services (like asset management services), major hotels, transport services, control system is designed around prime client accounts and continuous monitoring is done of the performances of such accounts.

In low contact services, personal relationship with client is relatively less important. Clients generally in such cases value the quality of service, timeliness of delivery of service, and other objective measures of service. Hence, management control system is designed around these areas.

Depending on whether a service involves high contact or low contact, managerial decisions can also be different. Some examples of such differences are given in Table 12.1.

Table 12.1 Differences in nature of decision or decision variables in High and Low contact service situations

Decision area	Decision/Variables in High contact service	Decision/Variables in Low contact service
Service Facility Location	Locate facilities near client	Locate facilities near supply source or where labour, transport and inputs are cheaper
Facility Layout	Client's physical and physiological needs dictate layout	Production efficiency considerations dictate layout
Process Design	Process stages directly affect client	Client not involved in the process
Scheduling	Client associated with production schedule	Client concerned with completion date
Production Planning	Orders cannot be stored (because a client can know through contact about such storage and can put pressure)	Orders can be delayed in order to get the advantage of longer run production or smoothing
Worker Skill	Both inter-personal skill and technical skill are important	Technical skill of worker is key
Quality of Service	Variable, based on discussions through contact	Measurable and fixed (because advise and discussions not possible due to low contacts)
Time Standards	Dependent on consumer needs-generally flexible	Tight time standards

Decision-making and control form a kind of loop in which the effectiveness of a decision is monitored through the control process and remedial actions are fed back and built into the decision-making in the next round. Control system to be useful therefore has to take into account the decisions and accordingly design its parameters. Some generalisations, in terms of design differences in high and low contact services, can be made as follows:

1) In high contact services, as stated in Table 12.1, quality, process stages, delivery time and production plans tend to become relatively more flexible. The client expectation in these areas may change during his contact with the service organisation. Accordingly, the control system also has to be flexible to keep in tune with the changing needs of clients. Further, when contact is almost continuous, the control system may have to be on real time basis.
2) In low contact service, production runs are of longer duration and expected results are fixed for a relatively longer period. Thus in low contact service periodic control becomes adequate.
3) Control is based largely on technical aspects in case of low contact services and on inter-personal aspects in case of high contact services.

In the following four sections we will take the cases of four specific service industries, and show how their characteristics determine the management control in such industries.

Activity 3

Study the working of the Postal circle nearest to you and explain how public contact characteristic is built into the control system design.

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12.5 MANAGEMENT CONTROL IN PROFESSIONAL FIRMS

In a professional firm the key resource is professional man's time and talent. A part of this resource is spent directly for client's benefit and the remaining part is spent indirectly for promotion and research. A control system for such firms accordingly is designed to monitor,

i) the utilisation of time
ii) the worth of talent
iii) billing and realisations
iv) acceptance of work by client.

Utilisation of Time: Time use can be monitored through proper time record. From the time records a professional man periodically compiles separately the time he has spent for client systems and time spent for administrative work, professional development, promotion,etc. For the former a client is charged, and therefore that is called chargeable time. The latter is not chargeable.

Keeping proper time records helps in many ways, e.g., in

i) billing a client
ii) future fee negotiations
iii) monitoring the extent of non-changeable time
iv) monitoring the ratio of chargeable time to non-chargeable time.
v) calculating overhead (other than cost of chargeable time) and rate of allocating such overhead to client.

Generally, professional firms maintain two types of time records—one relating to professional person's time and the other relating to client-wise time. These records are so designed that client-wise time and overall time use data can be compiled from such records at the end of the day.

Value of Talent: In case of professional services the general practice is to charge the client on per-day basis. Per-day fee is in the nature of a standard rate based on

a) Chargeable ratio and cost
b) Clients ability to pay
c) Future potential of client
d) Nature of service, and
e) Profit margin desired

Many professional firms, which do not keep a detailed account of time, either use a going-market-rate or a pay-rate-multiple-method for charging the clients. In going market rate, as the revenue gets determined automatically by the market rates, the profit planning or improvement can be done only through cost control. In case of pay rate multiple, the revenue side also can be varied, along with costs, to achieve profit.

Billing and Realisation: Professional firms key source of revenue is the professional fees. Therefore, billing and realisation of the professional fee is very important for them. Besides, cash position is also an important factor as it indicates the liquidity and ability of the firm to meet its current cash requirements. Firms use the following indicators to monitor these aspects:

1) Total billed amount to total value of work done.
2) Total realised amount to total amount billed.
3) Total unbilled amount to total value of work done.
4) Total cash available to so many times of the monthly cash requirements.

One of the strengths of professional firms is that they hardly use their own funds for running their business. More often they get advances from the clients and pay their liabilities with a time lag thus building a cash surplus. Advertising firms, for example, get almost the whole fee in advance in a few instalments and pay the publishing media a couple of months later. Similarly management consultancy firms also charge one-third or half of the whole fee in advance and balance in instalments during the progress of the project.

Acceptance of Work: A firm should have a clean understanding of the requirement of client, and this is generally documented in an agreement. The agreement highlights in particular.

a) The objective and nature of professional service
b) Technical requirements
c) Administrative details
d) Mutual responsibility in initiation and completion of the project.

During the ongoing phase actual progress in the above four dimensions should be monitored. Besides, the firm should also undertake a review on the quality of work done.

On the whole, management control systems in professional firms are found to be more in a fluid state than their counterparts in the manufacturing firms. This state is primarily due to the existence of vagueness in the firm's objectives, lack of uniformity in fee structures, uneven utilisation of professional personnel, and general absence of norms regarding overhead etc. The role of MCS therefore is focused around these factors so as to ensure that these are articulated, as far as possible, in clear terms and monitored accordingly later.

Activity 4
A Chartered Accounting firm is divided into three departments, audit, management consultancy and tax consultancy. Suggest how control system should be designed for these three departments. Visit a CA firm subsequently and compare your thoughts with actual practice of control system in the organisation.

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12.6 MANAGEMENT CONTROL SYSTEM IN HOSPITALS

Hospitals provide an example of a kind of service organisation, where the resources consist of receipts from patients, grants and subsidies. The expenses, which are met out of these resources, depend on the types and extent of programmes undertaken by the hospital. More often hospitals are run as non-profit organisations, though private hospitals may look forward to make profit also.

Management control in hospitals aims at

1) Achieving optimal resource allocation to various activities consistent with the hospital's priorities,
2) Recovery of cost from patients for services rendered, and
3) Achieving proper utilisation of professional time in the organisation.

Management control in hospitals uses a system called programme budgeting for the purpose of control. Under the system the total work of the hospital is divided into a number of exclusive programmes, and each programme is divided into a number of exclusive activities. For the programmes (and also for activities) costs are separately identified and collected such that for each programme, indicators by way of unit cost can be established. Thus essentially the relationship between physical aspects of programme and cost is established under the programme budgeting.

An example of Programme and Activity

Programme:	General	—	Control of Communicable Disease—Tuberculosis.
	Specific	—	Providing in-door facilities for treatment of 100 patients.

Activities: 1 Construction of a 100-bed ward for patients.
2 Recruitment of two specialist doctors in medicine.
3 Recruitment of six para-medical staff
4 Provision for furniture, fixtures equipments.
5 Medicine and other running costs.

Indicators of performance
- Treatment cost per patient
- Average time spent by doctors per patient
- Number of patients admitted to the number of beds available
- Number of patients cured and discharged to the number of patients admitted.

Management control system in a hospital can be designed to plan along the above activities and also monitor progress through these indicators.

Activity 5
Study in detail the family planning organisation in your own district and evaluate the control system prevailing in the organisation.

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12.7 MANAGEMENT CONTROL IN HOTELS

Hotel is a high contact service business. Investment in a hotel is made at a previous point of time, but the success of the hotel depends on the quality of service provided subsequently. In fact quality of service is the most important key to the success of a hotel.

Quality of service is dependent on the attitude and performance of the hotel employees who interact with the customers. Attitude and performance can be improved through:

- Proper training
- Establishment of norms of behaviour
- Establishment of objective standards of performance and enforcement of standards
- Proper career plan for employees, and
- Appropriate incentive and motivational system.

Training the hotel staff is a key activity. This includes training on work as apprentice, training in human relations, managerial and supervisory training, etc.

Norms of behaviour can be established by issuing programmed instruction manuals on work behaviour, technical proficiency, sartorial requirements, etc.,

Objective standards of performance can be established through job knowledge sheet which is used to break down jobs into dozens of components with norms of performance set for each. Performance objectives may also be clearly specified for each unit of the hotel. Monitoring may be built in to ensure maintenance of proper performance standards.

Manpower planning for the hotel is linked to the career plan of employees.

Manpower planning involved five basic questions:
- What would be the level of operations a certain years hence?
- How will the organisation structure look like at that time?
- What is the time requirement for developing people from inside to man this structure?

- What is the identified reserve talent?
- What is the recruitment need?

Answers to these five questions will lead to a plan of training and a schedule of manpower recruitment.

Motivation and incentive systems in hotel industry are generally stronger than in most other service industries. Apart from pay raise and promotions, tips for services provided is a direct incentive to workers in a hotel. In some good hotels tips provides as much earning to an employee as his direct pay packet. This system enables quality of service to be maintained to a great extent.

In hotel industry, management control system is geared primarily to monitor the above aspects, and *not* financial data. However, when these aspects are properly monitored, the quality is automatically ensured, and financial performance is consequently assured.

Activity 6
For the purpose of design of control system how would you divide a large hotel? What will be the parameters for controlling such divisions?

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12.8 MANAGEMENT CONTROL IN BANKS

Banks, as service organisation, are unique in the sense that they are barometers of the economy. The prosperity or decline of an economy is immediately known from the extent of banking transactions, deposits and loans. Banks are also unique in another way. The performance of a bank can be reasonably inferred if its Balance Sheet is known. Balance Sheet shows the major items such as, deposits and loans—from which interest income and interest expenses can be calculated approximately. It is in view of this fact that a bank's planning takes place in terms of growth of economy and general balance sheet items like deposits and loans.

Control systems in banks are designed around the following items:

1) Actual profit vis-a-vis profit potential of a bank branch;
2) Activity-wise performance of bank branches vis-a-vis potential;
3) Major client-wise performance; and
4) Overall asset management effectiveness.

Profit-based control: Bank branches as profit centres are a very common phenomenon, but banks face a number of problems in operating as profit centres which are not faced by normal manufacturing companies. For example,

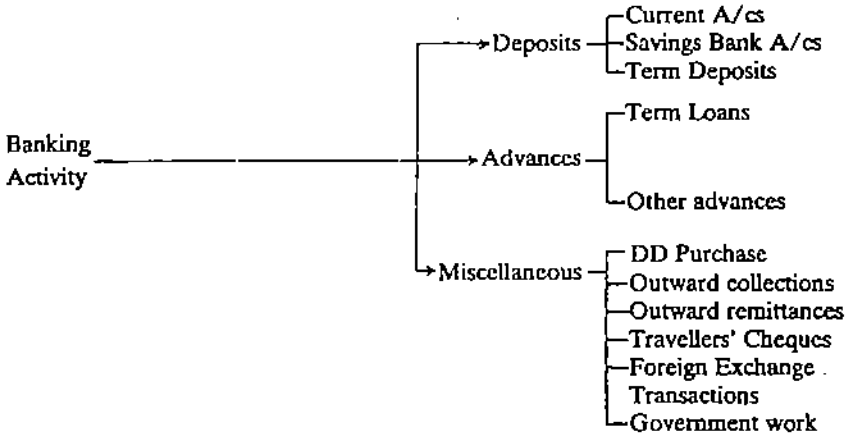
1) The interest rates are more or less fixed by government, and banks have little freedom to change the interest to increase their profit;
2) To a certain extent government decides about which sectors are to get loans. For example, out of the total loan to be granted by a bank branch at least 40% should go to the priority sectors;
3) Banks cannot use their total liquid assets fo the purpose of extending loans. In accordance with the statutory requirements ney have to maintain a cash reserve which limits the amount of loan they can ex nd and consequently, the earning potential;
4) Some branches may be deposit-heavy and s ne banks may be loan-heavy depending on their environment, location ar l clientele. Resources are transferred from deposit-heavy branches to l an-heavy branches in such situations. The funds are transferred at admi stered interest rates from one branch to another. If the rate is high the dep it-heavy branches gain at the cost

of loan heavy branches and if the rate is low, the reverse situation takes place. Since no accurate method of computing administered interest rates has yet been found, distortions continue to exist.

5) Bank branches receive a number of services from their regional offices or local head offices. Methods of allocation of costs of services to branches are not very accurate, and hence result in distortions in reported profits

Activity wise performance

Bank's activities can be classified as follows:



The major activities of deposits and advances are further monitored in terms of four sectoral groups, such as Personal, Commercial and Institutional, Small Industry and Small Business and finally, Agriculture.

Whether a bank's performance in any activity has been reasonable or not can be decided only on comparison of such performance with the potential. Generally demographic, industrial, agricultural and trade data of a few years is considered to give some understanding of the potentials. A large nationalised bank regularly collected the following data in order to make an assessment of the potential:

Population: Total population
No. of households
Persons engaged in large and medium industries
in small industries
in small business
in agriculture
in allied activities
persons unemployed.

Industry & Business

Large and Medium Industry—Units and annual turnover,
Large and Medium Business—Units and annual turnover
Small Industries — - do -
Sales tax paid by all industries

Agriculture

Major Food Crops area and annual production
Major Cash Crops with area and annual production
Other Crops with area and annual production
Allied activities—number of units and annual production.

Trade

Imports in rupees both for inland and foreign trade
Exports in rupees both for inland and foreign trade

Client-wise control

With labour and overhead costs rising, banks have tended to concentrate on more profitable accounts and de-emphasise unprofitable ones in several ways. This has

necessitated account profitability analysis. Under the analysis the earnings from services offered to client are calculated and the costs of transactions are deducted to arrive at net profit from a client account. A typical form of Account Profitability analysis is given below:

Account Profitability Analysis

Name_____

Income

Facilities: Overdraft_____

Letter of credit_____

Bill discounting_____

Guarantees_____

Others_____

Margin_____

Income:

Interest_____

Exchange_____

Commission_____

Total Income _____

Expenditure

Transaction Cost Item	**Volume Product Cost**	**Total Cost**
Vouchers Processed Bills discounted		
L/c's opened Remittances		
Others		
	Total Transaction Cost	_____
	Cost of funds	_____
	Total expenditure	_____
	Net profit from client	_____

Asset Management Effectiveness

Overall effectiveness of a branch depends on the management of its portfolio of assets and liabilities. Proper planning of loans, advances and investment in securities can help in the reduction of risk and increase in interest earnings. Similarly, proper planning of liability side (i.e., various types of deposits) can be helpful in reducing the interest liability. Thus if both sides are planned, profit can be improved substantially.

In profit planning (or in asset and liability management) banks more often than not are faced with constraints posed by statutory and regulatory conditions. Sometimes a bank's earning potential is limited by statutory deposits in the Central Bank, obligatory loans on low interest or loans to weaker sections with high risk. Besides, in developing countries the interest rates are also determined by the central bank or Government, thus placing additional curbs on the banks. However, within these constraints and limitations the banks still have scope to manage their portfolio of assets and liabilities to their advantage. Accordingly overall control systems can be designed around earnings or profit.

Activity 7

Visit any local head office of a bank and write a brief essay on how control system works in the bank.

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12.9 SOME TRENDS OF CHANGES IN THE SERVICE INDUSTRY

It was stated in an earlier Section (12.2) that services have four major characteristics—unique individual tailority, continuous contact, inseparability of production and delivery, and involvement of professionals. However, over the last few years certain changes have been observed in these characteristics, such as the following:

i) From unique tailoring to standardised packages (e.g. banking services, tour packages)
ii) From continuous personal contact to mechanical contacts (vending machines in low cost hotels or prerecorded replies)
iii) From simultaneous production and delivery to interval between production and delivery (e.g. educational films, distant learning packages)
iv) From involvement of professionals in mechanisation and programming (e.g. appraisal packages, health diagnostic software packages and other expert systems).

It is expected that with greater demand for services and increased data processing capability, some of the conventional services will tend to get routinised and standardised. These may also not require simultaneous production and delivery nor professional contact.

Activity 8
Study any service organisation which has grown at a rapid rate over the last ten years and examine how structure and control system have changed to cope with the growth.

12.10 SUMMARY

Designing management control system for service organisations becomes difficult for several reasons. Firstly, services, compared to manufactured products, are generally intangibles and not amenable to quantification. Secondly, there is so much of diversity among different types of services that coming up with useful generalisations becomes difficult. In spite of these difficulties, attempts have to be tackle the problem and develop at least some approaches to design.

Services involve four major characteristics—custom-made tailoring, continuous contact with client system, simultaneous production and delivery, and involvement of professionals. Besides, services may either be equipment-based or people-based. In an equipment-based service organisation, control system is designed around monitoring utilisation rate of equipment whereas in a people-based service organisation, it is designed around monitoring of professional time use and quality of work.

Services can also be classified into high contact service and low-contact services. In case of high contact service, time spent with client system, billable time, repeat business, frequency of contact, etc. constitute the building blocks of control system. In case of low contact services, control system instead is designed around quality of service, delivery of service and similar variables.

Design of Management Control System for specific service organisations may take into account the particular characteristics of that service sector and the clientele. In

professional firms like consultancy organisations, professional time use, worth of talent, billing and realisations and finally acceptance of work become the key variables around which a control system is designed. In hospitals, programme-based control accompanied by some indicators of performance like treatment cost per patient and the number of patients cured to the number of patients admitted from the prime focus of the control system. In hotels, quality of service is the key. Quality of service can be ensured by proper training of hotel employees. Thus control system in hotel is generally geared to monitor the manpower planning and development activities. In banks, control system is designed around deposits and loans, client-wise performance, and measurement of asset management effectiveness. Thus, control system design considerations can be to some extent different for different kinds of service organisations.

12.11 KEY WORDS

Equipment-based Service involves activity in which the role of equipment is of relatively greater importance than the role of a professional.

High-contract Service involves activity in which there is continuous and intensive contact between the professional rendering such service and the client system.

Service is an activity, undertaken by an individual/organisation, with intangible output for the benefit of the clients.

12.12 SELF-ASSESSMENT QUESTIONS

1) How is a service organisation different from a manufacturing organisation? How do these differences affect the control system design in a service organisation?
2) Design management control system for a company which renders computer service to outsiders.
3) What are the differences between high-contact and low-contact service? How do these differences affect control system between these two types of organisation?
4) What is an equipment-based service? How does one design a management control system for an equipment-based service organisation?
5) Explain the characteristics of an advertising firm. Taking into account these characteristics, suggest the salient variables around which control system should be designed for such a firm.
6) Classify the following services into high-contact/low-contact and equipment-based/people-based categories, giving your justification for such classification.

Maintenance service	Travel agency
Fire service	Computer service
Advertising service	Medical consultancy
Architect's service	Household service
Tax consultancy	Hotel
Solicitor's firm	Insurance service
Management consultancy	
Airlines business	
Transport agency	

12.13 FURTHER READINGS

Ashton, G., 1975, 'Quality Control in a Service Business', *Harward Business Review*, July-August.

Ashton, G., 1985, Management Accounting in Hotels & Catering, *Management Accountancy*.

Dearden, J., 1978, Cost Accounting Comes to Service Industry, *Harward Business Review*, Sept.-Oct.

Sartoris, W., 1971, Transfer Pricing for Banks, *Management Accountancy*.

UNIT 13 MANAGEMENT CONTROL IN NON-PROFIT ORGANISATIONS

Objectives

The objectives of this unit are to:

- familiarise you with the characteristics of Non-Profit Organisations (NPOs)
- explain different methods of measuring output for such organisations
- explain the methods of pricing the services rendered by NPOs
- enable you to appreciate the nature of management control problem in NPOs, and to design appropriate control system.

Structure

13.1 INTRODUCTION

Organisations can be grouped broadly into two categories: profit oriented organisations and non-profit organisations. The primary distinctions between the two categories arise from the purpose for which they exist. In a profit-oriented organisation, all economic and other activities aim at generating profit for the organisation. Profit is the measure of both efficiency and effectiveness in such organisations. On the other hand, in a non-profit organisation, service is the primary objective. A non-profit organisation may offer a certain kind of service, or may aim at providing integrated service for a target group or to public at large. Thus, rendering a service or welfare is the primary purpose of a non-profit organisation.

It may be emphasised that the purpose is the key, not the actual profit or service. Some profit-oriented organisations may incur losses due to circumstances or due to their inefficiency. Likewise, some non-profit organisations may show surplus or profit, but such actual happenings are irrelevant in judging whether an organisation is profit or non-profit organisation.

Non-profit organisations provide a significant proportion of service to us in our everyday life. Universities, Colleges and other educational institutions, government and charitable hospitals, clubs and associations, research and development organisations, voluntary organisations, and quasi-government organisations like municipalities and corporations are examples of non-profit organisations.

13.2 SERVICE ORGANISATIONS AND NON-PROFIT ORGANISATIONS

Large majority of non-profit organisations tend to be service organisations. Similarly, many service organisations also tend to be non-profit organisations. There are

however exceptions to this. We can find service organisations which are profit-oriented and producers' organisations which are non-profit in character. Some examples are given below.

Profit-oriented service organisations	Manufacturing or Producers' Organisations which are Non-profit Organisations
Consultancy houses	
Computer services firms	
Audit firms	Producers' Cooperative Societies
Private hospitals	Craft associations.
Private schools/educational institutions.	

13.3 CATEGORIES OF NON-PROFIT ORGANISATIONS

Non-profit organisations can be grouped into three types, namely, client-oriented, public-oriented and member-oriented.

In a client-oriented organisation service is provided to specific clients and a fee is charged for services rendered. The fee itself becomes a measure of services or the work done. In these cases management control system can be set up, like in profit-oriented organisations, around the fee generated. However, determination of fee may be quite difficult in non-profit organisations. We shall return to this aspect later.

In a public-oriented organisation, work is done for public at large without collecting any fee from them. The service generally is in nature of "public goods". Here output is not measurable precisely. This along with the fact that public-oriented organisations being unique in several ways, makes it difficult to design a control system for such public-oriented non-profit organisations.

Member-oriented organisations fall between client-oriented organisations and public-oriented organisations. They provide service to members of the organisation for a fee which is generally lower than the fee charged by client-oriented organisations. Besides, members also get priority in their claim for services over non-members.

Some examples of Non-profit organisations in the three categories are:

Client-oriented	Public-oriented	Member-oriented
Blind school	Government	Club
Voluntary organisations with a specific mission	Museum	Industry association
	Municipalities	Research association

For designing management control systems it is useful to think of the three organisations as falling in a continuum with the public-oriented organisation on one extreme and the client-oriented organisation on the other. Out of the three, designing a management control system is most difficult in case of public-oriented organisation for the following reasons:

- In a member or client-oriented organisation it is relatively easier to determine the fee for services rendered. In public-oriented organisations, either no fee or a nominal fee is charged. So revenue-earning as a measure of efficiency is not available to such organisations.
- In a client or member-oriented organisation, clients and members actively involve themselves and decide about the nature of programme to be offered by the organisation. In a public-oriented organisation, involving the public in general in decision-making is difficult.
- In a public-oriented organisation social and political compulsions often distort the conventional efficiency measure.
- In case of client or member-oriented organisation, comparisons can be made with

similar organisations, but comparison is often not possible in public-oriented organisations since similar organisations may not exist.

13.4 PROFIT & NON-PROFIT ORGANISATIONS: DIFFERENTIAL CHARACTERISTICS

It has been briefly indicated that the primary difference between profit and non-profit organisations lies in the purpose for which they exist. This along with a number of other differences that exist between them are explained below:

Profit measure: In a profit-oriented organisation profit becomes a measure of success, but in a non-profit organisation profit cannot be used as a measure. Consequently, non-profit organisations depend on a number of output measure each of which intends to measure results on one of the objectives. There is gener no commonly acceptable method of combining these measures into a single overall indicator and this absence of an acceptable method becomes a major hurdle in the way of designing management control system for a non-profit organisation. Besides, the non-profit organisations are also relatively less interested in profit measurement because—

- Profit is contradictory to their service objective.
- Profit at best is a short term measure of performance.
- Profit may be a totally inadequate measure of performance of certain kinds of responsibility centres, such as R & D centre, managed cost centre etc.

Market Forces: Profit-oriented organisations are more subject to market forces than non-profit organisations. They produce only the products which the customers want. They cannot ignore competition and market changes. In contrast, non-profit organisations worry less about market happenings, and still less about competition.

Profit-oriented organisations welcome new customers and sometimes promote potential customers, as more customers are likely to bring in greater profits. On the other hand, non-profit organisations try to avoid new customers, as they perceive that new clients or customers may put additional strain on their existing resources.

Managers in profit-oriented organisations undertake new programmes or activities based on the market need. In case of non-profit organisations such programmes and activities are determined on the basis of personal convictions of what is important.

Value system: Profit-oriented organisations operate on the basis of economy in cost, maximisation of revenue, efficiency in technical and operating matters etc. The financial considerations are the Prime factors in deciding about such actions. In contrast, in a non-profit organisation, the value system of the owners plays a key role in determining activities. The ethos and the ideals play more important role than in the financial considerations.

Role of Professionals: As far the role of professionals, service organisations and non-profit organisations are very similar. Both depend on professionals who are the key people for conducting the programmes and activities. These professionals also interact with the client system or the members. But in case of profit-oriented organisations managers play relatively more important role than the professionals. This is partly due to the fact that professionals are less attracted by financial considerations and financial incentives. They also prefer to keep themselves busy with their own technical work, instead of becoming concerned with the managerial tasks like organisational development, industrial relations, profit planning, which are some of the key tasks in a profit-oriented organisation.

Ownership and Power: In a profit-oriented organisation, the managers remain accountable to the chief executive who in turn reports to the Board. Board is accountable to the shareholders who through various means control the behaviour of the Board. In a non-profit organisation, the funds are provided generally by various people who individually may be interested in specific programmes, but *not* in all

programmes. They do not exercise any common control over the management. Similarly, due to absence of pressures for profit, or pressures from agencies, the management also feels no compulsion to exercise strong control over the lower levels. As a result, control system tends to be soft in a non-profit organisation.

However, it should be emphasised here that while in reality control system tends to be soft in a non-profit organisation, the need for a stronger control system in a non-profit organisation is greater compared to a profit-oriented organisation. If something goes wrong in a profit-oriented organisation it gets reflected in reduced profit, and sets off a trigger signal for the management to act. This is not so in a non-profit organisation and therefore a non-profit organisation has to evolve a proper control system if it has to keep track of its activities.

Politics: Non-profit organisations are prone to greater pulls and pressures from political leaders and groups. As a result, it cannot work on the basis of its own internal rationale. The unstructured nature of pulls and pressures makes it difficult to design control system for a non-profit organisation.

Activity 1

List organisations with which you often interact and classify them into profit and non-profit organisations. Try to understand how the two groups differ in terms of the six characteristics listed above.

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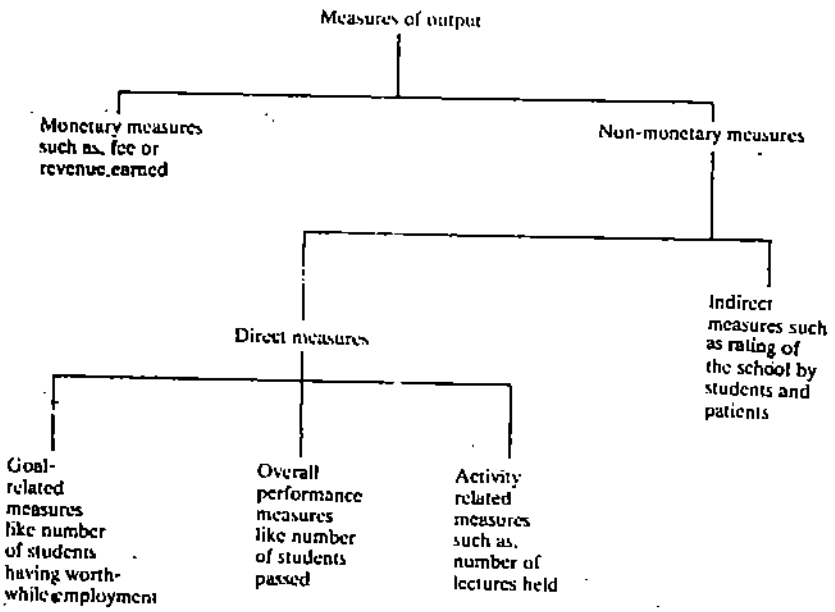
13.5 MEASURING OUTPUT

In order to assess the effectiveness of a non-profit organisation, it is essential to have an understanding of its input and output and measure these in some way. Inputs consist primarily of costs—material, labour and overhead expenses—and these do not provide any difficulty of measurement. The difficulty arises with regard to output, which can be measured in monetary terms only in some cases, and in non-monetary terms in most cases. A classification system for various output measures for non-profit organisations is given in figure 13.1.

13.1: Classification of Output Measures



Inputs in non-profit organisations can be easily measured in monetary terms. If output also can be measured in monetary terms, the input-output relationship can be calculated and this can serve as a measure of effectiveness. However, in most of the non-profit organisations monetary measure of output can be misleading. Strictly speaking, monetary output of a school is fee earned and that of the irrigation department is water tax collected. But these are so nominal in comparison to the work done by the departments that to use these as output indicators can be totally misleading.

Fees in non-profit organisations are generally low due to the following reasons:

- Patrons and governments, being interested in the programmes of non-profit organisations, provide grants which create an element of subsidy. As a result the fee is kept low.
- Non-profit organisations being in the nature of service organisations, their managements do not lay any significant emphasis on revenue generation.

Due to the inadequacy of monetary measures, non-profit organisations are found to use other direct measures. An irrigation department, for example, may use the following:

Goal-related measure — Increased Crop production
Overall performance measure — Average acreage in land irrigated.

Out of the three measures shown in Figure 13.1, *goal-related measure* is decidedly the best as it is related to the ultimate objective, but when seen in relationship with the input, it cannot be said that the output is the direct consequence of the input. As in the above example an Irrigation Department may spend a certain amount on Irrigation, and the crop production may go up by a certain quantity, but increase may be due to improved seed, intensive use of fertiliser, crop rotation, and other scientific methods of cultivation. Thus the increase in crop production cannot be attributed to irrigation alone. Thus, the goal-related measures suffer from certain inadequacies and therefore, may not be accurate.

Overall performance measures like number of students passed or area irrigated reflect the result of efforts but here also some weaknesses continue to exist. For example, the students may have just barely passed with low percentage of marks. Or the school could have possibly taken good students whose standards while in school might have deteriorated. Similarly, a land may have been irrigated, but might have received scant irrigation water. Thus, overall performance is a more direct measure compared to goal-related performance but is still not a quite perfect measure.

Activity measures are not related to results but related to quantified physical work done. Number of lectures taken and million of gallons of water supplied are activity measures. However, these measures are also not flaw-less. For example, more of lectures does not necessarily mean that teaching is more effective. Similarly, millions of gallons of water supplied at inappropriate time might have done more damage than good.

Thus, all the three direct non-monetary measures while providing useful indicators, suffer also from inadequacies. These inadequacies must be appreciated before making use of these indicators.

When direct measures are not available, non-profit organisations tend to use indirect measures. For a club, the demand of club membership is an indirect indicator of quality of service provided by a club. For a welfare agency, repeat programmes and continued external funding are indirect indicators. For an irrigation department, an indirect indicator is the additional area brought under multiple cropping. Indirect indicators have in many cases been successfully used to measure output.

Activity 2
Visit a government department which handles developmental work like irrigation, health, education, public works etc. Obtain a copy of their performance budget and study the work load indicators. Classify output measures used in these indicators into various categories explained above.

13.6 PRICING IN NON-PROFIT ORGANISATIONS

Non-profit organisations do not generally consider pricing to be an important factor, and accordingly give inadequate attention to it. However, a reasonable pricing policy can provide several benefits.

1) If pricing is done based on market forces, (or at least close to market rates), the revenue can be an approximate measure of output. This can be used in the management control structure for measuring efficiency and effectiveness of the non-profit organisation.
2) Pricing of service makes the user of such services conscious of the value of service and he can decide whether at a given price it is worthwhile to avail of such services. If revenue based on approximate market price does not cover full cost, it is indicative of the fact that the service is not considered valuable enough by the users to warrant the cost of providing for it.
3) Pricing helps in converting responsibility centres of non-profit organisations into profit centres. The managers of these centres then can be motivated, like in profit-oriented organisations, to increase revenue and reduce costs which can lead to greater efficiency in resource utilisation and resource generation.

Pricing methods

Full cost plus: Non-profit organisations do not aim at making profit, but sometimes they charge very low margin over full cost from non-members. In a way the mechanism is intended to discriminate between members and non-members. Members normally pay on the basis of cost, non-members pay a slightly extra amount which forms the margin.

Pricing at full cost: Pricing at full cost is very common and more generally prevalent in non-profit organisations. This is consistent with the organisations' non-profit status. However, some non-profit organisations being monopoly organisations, there is temptation to follow cost-plus pricing and generate a surplus when there is demand for their products and services. However, since such a pricing runs counter to the ideology of non-profit organisations such temptations should be resisted.

Pricing at lower than full cost: Non-profit organisations often get subsidies from doners, patrons or government agencies for providing services of a certain kind or to a certain target group. Such agencies may attach conditions to the funding. As a consequence of such conditions non-profit organisations may charge lower than full cost price for the service from the beneficiaries. In such cases while the beneficiary gets the product at subsidised price, the NPOs get the full cost reimbursed with subsidy added to the price charged.

Charging prices at less then full cost can create an impression that cost of service is low and consequently demand for services tends to be higher than what it should be at full cost price. Thus subsidised price creates distorted demand, and to an extent may be the cause of misallocation of national resources.

Advance pricing: Advance price (or prospective pricing) is a pre-estimated price determined prior to delivery of service. The client pays on the basis of such price. Such pricing, in contrast to actual cost-based price, provides motivation to NPOs to reduce cost, or by reducing cost the NPOs can generate a surplus. In an actual cost (or cost plus) pricing, NPOs do not get such motivation, and in fact, as the total actual cost is reimbursed, there is generally no concern about controlling cost at all. Thus, from the point of view of control, advance pricing has a clear advantage over actual cost-based pricing.

Pricing of Secondary Services/Products: The absence of surplus orientation in NPOs applies only to the main activities of the organisation, but not to its secondary

or peripheral activities. For example, in a hospital, the general services such as health care, pathological tests, x-rays, surgical care, meals and bedcharges may be priced on non-profit basis, but a gift shop or a fruit shop may price its products based on market prices. Similarly, a hospital may sell its disposables based on whatever price the market can fetch, and not on subsidised or cost basis.

Pricing unit ...ng unit in NPOs should be specific and small so that it serves as a good unit of cost and output measure. A very broad pricing unit, such as, charges per day in a hospital may not show the mix of various services offerred during the day. One patient may have availed of surgical facilities with expensive drugs and another may be waiting only for an overall check. To charge both on daily basis would not only be unfair, but also an incorrect measure of true services rendered by the hospital. In view of this therefore the hospital services should be broken up into specific activities, and separate fees should be charged for each. Surgical operation time, rental for bed, work-up cost of admission, Pathological test, X-ray etc. can thus be activity units for which prices may be fixed.

Activity 3

a) Choose a voluntary organisation and identify the services offered by such organisation. Find out how they price the services and whether there is any subsidy element in it.

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b) Distinguish between the main activities and peripheral activities of the organisation. Examine if there is any difference in the pricing policy.

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13.7 MANAGEMENT STRUCTURE IN NPOs

Large majority of profit-oriented organisations have corporate, partnership or proprietory forms, where the primary authority is derived respectively from the shareholders, partners or proprietor himself. At executive level, the Board in case of companies, working partner(s) in case of partnerships and manager or proprietor in case of proprietorships play the top management role. In contrast, non-profit organisations do not generally take corporate or partnership form. They are formed as Trusts, Associations, societies, or as statutory bodies. NPOs are generally highly individual-based and individual ideology becomes the prime driving force in the activities. In large NPOs and statutory NPOs like government or quasi-government organisations, nominated individuals or ex-officio officials play the top management role. In a profit-oriented organisation, the accountability at each level is specific and definite. In NPOs the accountability is generally not clear. In a profit-oriented organisation if something goes wrong, it immediately gets reflected in profit and hence corrective actions can be taken. "Since there is no such indicator in NPOs, mistakes often remain undetected. That is why there is greater need for a well-designed control system in NPOs than in a profit-oriented organistion."

Profit-oriented organisations are internally divided as investment centres, profit centres, revenue centres, cost centres etc. as financial aspects are very important for profit-oriented organisations. In NPOs, in contrast, organisational units are divided as 'mission centres' and 'service centres'. Mission centres are held responsible for the basic tasks and service centres help out the mission centres in performing these tasks. For example, in a voluntary organisation engaged in rural development, there are six centres out of which three were mission centres and three service centres as follows:

Mission Centres	Service Centres
Drinking water wing	Public liaison Department
Child & Mother care wing	Purchases Department
Adult Education wing	Administration Department

The performance of a mission centre is measured through the primary task performed by that centre, and the money spent per unit of such task. The expenses incurred by service centres are allocated to mission centres based on quantum and proportion of services rendered to such centres.

13.8 CONTROL IN NPOs

Control in NPOs is based on functions, programmes and activities where a function is defined as a major area of distinct service. A function consists of a number of programmes and each programme a number of activities. A programme is a specific service, and an activity is a collection of tasks.

For a voluntary organisation engaged in rural development, rural health care may be a function, but drinking water facilities, vaccination and disease control are programmes. Sinking tube wells, setting up a hospital, weed control, spray or fumigation or mosquito control are examples of activities. Sometimes organisations also use their own nomenclature, such as major programmes, programme sub-categories and programme element but they stand respectively for functions, programmes and activities. Some more examples of functions, programmes and activities for two government departments are given in Table 13.1.

Table 13.1: Programme – Activity classification for a few government departments

Functions, Programmes and Activities / Department	Education & Youth welfare	Agriculture & Irrigation
Function	**Education**	**Agricultural Development**
Programmes	• Primary Education • Secondary education • Higher education • Vocational education • Technical education • Adult education	Development of commercial crops Development of staple crops Production of fruits & vegetables
Activities	Setting up primary schools Primary Teachers' training Setting up primary Teachers' training schools Curricular development for primary level Student aid	Supply of improved seeds Research on high-yielding variety Creation of marketing organisation Input supply Providing credit facility

As we can see from the table the Department of Education and Youth Welfare can have education as one of its major functions and education can be divided into six programmes, namely, primary, secondary, higher, vocational, technical and adult education. Each programme will have a number of activities. The activities relating to only primary education is given in the table. The five activities together cover the totality of primary education programme. Sometimes we have specific activity like setting up a primary education programme or setting up a primary school at place X, which is a part of the first activity and is also referred to as a project. Thus, under each activity there can be a number of projects.

Control system in NPOs should ensure that for each activity norms of efficiency are evolved and actual performance compared against these norms. For primary education programme, for example, the expenditure norm may be Rs. 1.5 lakh for setting up a new school with a student capacity of 200, or an expenditure of Rs. 3,000/- for training one primary school teacher. Similarly, for an existing school, annual expenditure norm may be Rs. 130/- per student.

The above norms form the building blocks of control in NPOs. If norms for the activities are agreed upon, the norms for a programme can be arrived at by the

process of summation. These norms can be used for controlling the performance of the mission centres, and also for planning, control and resource allocation in NPOs in general.

Non-profit organisations being very different from one another, prescription of specific methods and processes of control is difficult. However, it has been found that continuous emphasis on the following may, in the long-run, result in a sizable pay-off.

- Cost reduction
- Reexamination of systems and procedures with a view to improve upon them.
- Comparison of cost with the cost of similar activities and programmes.
- *De novo* examination of relevance of specific activities and programmes (i.e. application of 380 based budgeting).
- Time measurement for repetitive operations to achieve improvements.
- Periodic overall review of working of an NPO.

Activity 4
Examine the control system of a non-profit organisation with which you are familiar. List out the performance indicators for different programmes and discuss how effectively these indicators are used in reality.

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13.9 ACCOUNTING IN NPOs

Specific outlays may be earmarked for specific tasks in profit-oriented organisations, but in general strong emphasis is laid on the overall profit or loss and accounting systems are designed to calculate profit or loss through Profit and Loss Account. As profit is not an important consideration in NPOs, Profit and Loss Account gets relatively less attention. In NPOs, accounting system generally revolves around 'funds' – each fund identified with a specific programme. For each fund a separate account is kept and it is expected that the grants or donations received for a specific programme are deposited in the fund related to that programme. Since patrons and donors generally want to know the status or progress of a programme and also of the expenditure, a fund accounting system can make it immediately possible to compile such information. Besides, since in respect of programmes NPOs operate on 'equal-cost' basis, a fund accounting system provides a timely check in terms of ensuring that the expenditure on a programme does not exceed the total funds obtained for the programme. Thus, the fund accounting system is more in the nature of financial control over spending. However, accompanied by proper programme/activity based control, fund accounting system can be immensely useful as a control tool in the overall control system in a non-profit organisation.

13.10 SUMMARY

The objective of a non-profit organisation is not to earn profit, but to provide, on cost basis, a certain kind of service in general or integrated service for a target group. In a profit-oriented organisation management control system can be designed around a number of indicators. But, control system design in NPOs is often difficult due to a number of reasons. The relative reluctance of NPOs to attach importance '[illegible]' forces, predominance of value system over technical/operating efficiency, dominance of professional competence over managerial competence, lesser involvement of owners, and influence of political persons on the activities of NPOs create problems in designing control systems.

If prices of services offered by an NPO can be reasonably fixed based on market prices, the revenue can be taken as a good measure of its output. By relating the

output to cost, the efficiency of the NPOs can be determined. But often prices in NPOs are fixed on cost basis or on subsidised basis. Thus, revenue based on such prices cannot be regarded as a good measure of output. In view of this, NPOs use other output measures such as goal-related measures, overall performance measures, activity-related measures and indirect measures.

In profit-oriented organisations, control structure comprises investment centres, profit centres, cost centres etc. In NPOs, in contrast, the centres are mission centres and service centres, where each mission centre handles one or a few programmes. The control within a mission centre is based on programmes and activities for which workload or performance indicators are developed. NPOs use a system of accounting called 'fund accounting' under which for each programme a separate account is maintained. Such separate accounting ensures that no more than available funds for a specific programme are spent on such programme. Thus, programme-activity based control and fund accounting together form the crux of control system in NPOs.

13.11 KEY WORDS

Fund Accounting: An accounting system under which separate accounts are kept for different programmes, such that for each programme receipts and expenditures can be compiled.

Function: A major category of distinct service such as rural development, education etc.

Programme: A part of function having a clearly defined end product such as primary education.

Activity: A group of similar tasks within a programme.

Project: A specific task within an activity.

Full cost pricing: A system under which the price covers variable costs and overheads, but no margin.

Prospective pricing: A system under which price is fixed in advance on the basis of estimates and clients are charged on that basis.

Full cost plus pricing: A system under which price is intended to cover a profit element.

Secondary Activities: Activities unrelated to the primary objective of the organisation; often referred to as peripheral activity.

Pricing unit: Unit of activity or task for which a fee or price is fixed.

Mission centre: Organisational unit responsible for a certain mission or programme.

Goal-related output measure: A measure of the ultimate objective of the organisation.

Indirect output measure: A surrogate measure by which output is not measured directly, but measured via a variable which has a strong relationship with output.

Activity-related output measure: A measure of progress of stages of the programme; not of output (such as, kilometres of canals dug in an irrigation project.)

13.12 SELF-ASSESSMENT QUESTIONS

1) What is a non-profit organisation? Explain how it is different from profit-oriented organisations and service organisations.
2) Why is control system design difficult in NPOs? Explain with reasons.
3) Why is it necessary to measure output in an NPO? Explain in this context different types of output measures alongwith their merits and demerits.
4) Pricing of service in an NPO cannot be done on the same basis as pricing in a profit-oriented organisation. Explain the reasons, and also the different pricing methods used in NPOs.

5) Take a large non-profit organisation, with which you are familiar and develop a programme structure. (See that the programmes have well-defined output and together cover the total function, and similarly activities under each programme have well-defined boundaries and together constitute the totality of the specific programme.)

6) Taking the programme structure of the preceding question, develop indicators for measuring output or performance for the programmes and activities.

13.13 FURTHER READINGS

Anthony, R.N. and John Dearden, 1977, *Management Control Systems — Text and Cases*, Irwin, Illinois.

Anthony, R.N. and R.E. Herzlinger, 1975, *Management Control in Non-profit Organisations*, Irwin, Illinois.

Kerrigan, H.D., 1969, *Fund Accounting*, McGraw-Hill: New York.

Lippincott, Earle and Elling Aannestad, November-December 1964, "Management of Voluntary Welfare Agencies", Harvard Business Review.

Macleod, Roderick K., September-October 1971, "Programme Budgeting Works in Non-profit Institutions", Harvard Business Review.

Selby, Cecily C., September-October 1978, "Better performance for Non-profits", Harvard Business Review.

Sharma, S.C., 1988, *Management Control Systems — Text & Cases*, Tata McGraw-Hill: New Delhi.

Notes