Uttar Pradesh
Rajarshi Tandon Open University

Management Control Systems

Block

1

BASIC CONCEPTS

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RIL-106

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RIL-106

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
1.2 General Concept of Control
1.3 Organisational Control
1.4 Management Control
1.5 Management Control and Strategic Planning and Control
1.6 Management Control and Operational Control
1.7 Characteristics of Management Control Systems
1.8 Designing Management Control System : General Considerations
1.9 Management Control System and Responsibility Accounting
1.10 Informal Management Control
1.11 Summary
1.12 Key Words
1.13 Self-assessment Questions
1.14 Further Readings

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.

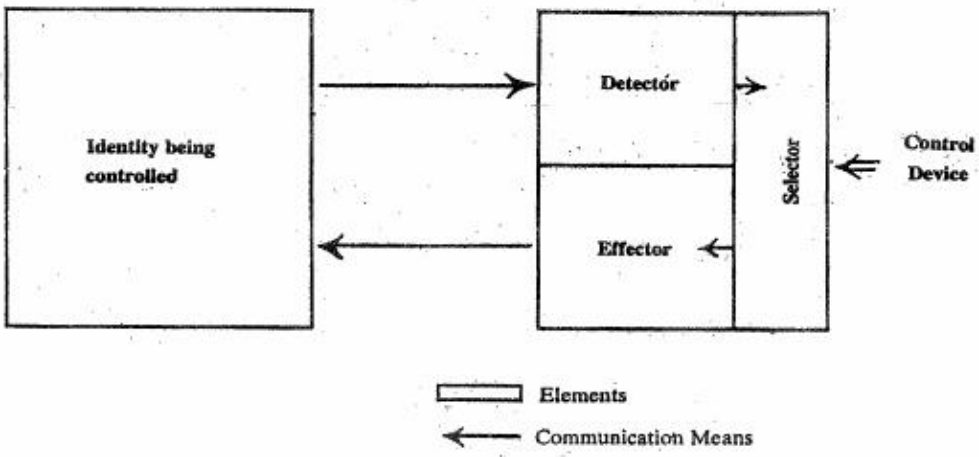
1.2 GENERAL CONCEPT OF CONTROL

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, shows 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.

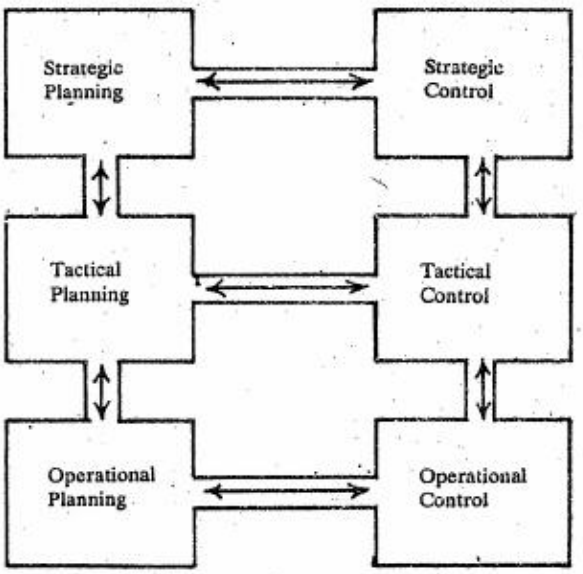
It should not, however, be difficult to appreciate that the control process in an organisation is much more complicated than the control process in simple situations such as thermostat control of a furnace or control of body temperature in most mammals or control of an automobile by its driver. In an 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 effectiveness of performance. Efficiency, in simple words, is the amount of output per unit of input and effectiveness is the ratio of actual output to the intended or target output. Stated differently, an efficient manager is one who does whatever he does with 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 service 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 diposition 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 i.e. 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 of influence or decision making power he or she wields, whilte the responsibility accounting is guided by information principle i.e. locating the individual in the organisation who is in the best postion 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. Govt

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 the evaluation of responsibility centres.

Structure

2.1 Introduction
2.2 Delegation and Responsibility Centres
2.3 The Concept of Responsibility Centres
2.4 Organisation Structure and Responsibility Centres
2.5 Types of Responsibility Centres
2.6 Establishing Responsibility Centres
2.7 Performance Evaluation of Responsibility Centres
2.8 The Concept of Responsibility Accounting
2.9 Summary
2.10 Key Words
2.11 Self-assessment Questions
2.12 Further Readings

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 some businesses where the delegation is based on the functional responsibilities, such as production, marketing and finance. In some other cases different 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

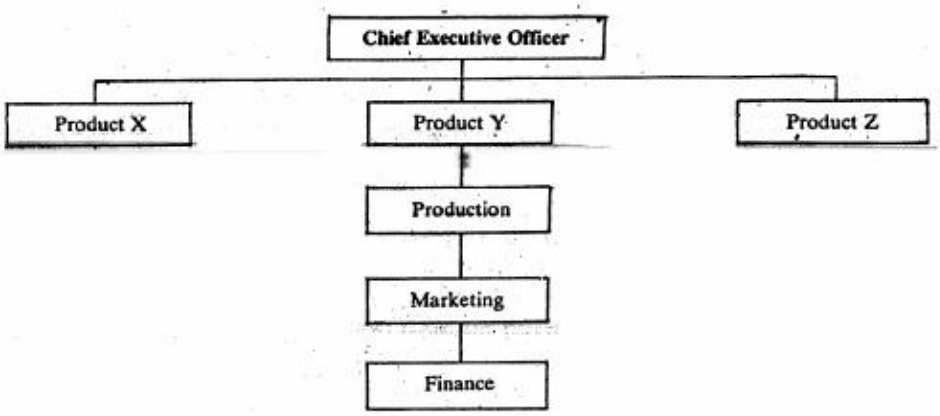
Exhibit 2.1 : Functional Organisation



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.

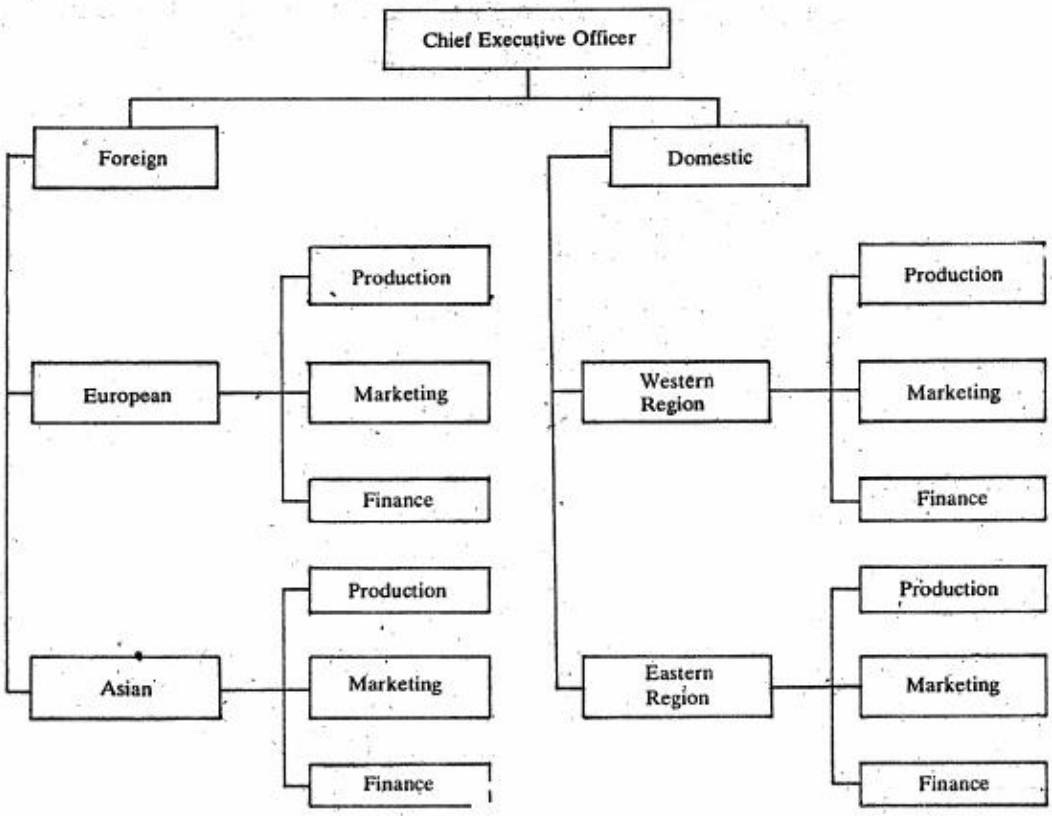
Exhibit 2.2 : Product Line Organisation



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.

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

a) 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.

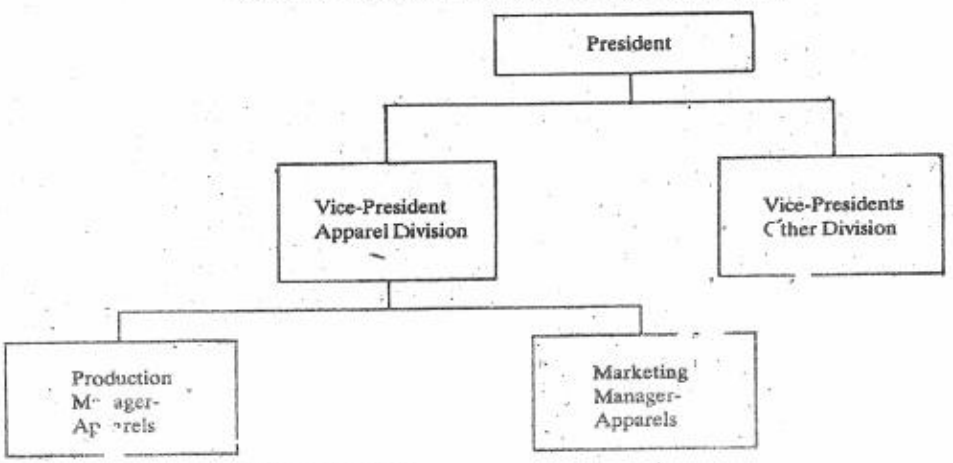
The usual forms of responsibility centres in different organisations vary widely. It can be the entire company, business units, product divisions, sales branches, sales regions, functional departments such as production, marketing, personnel and finance or their subdivisions.

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



RIL-106

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 .....
.... of the business namely.....
..... and ..... .

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 charges should be effected :

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

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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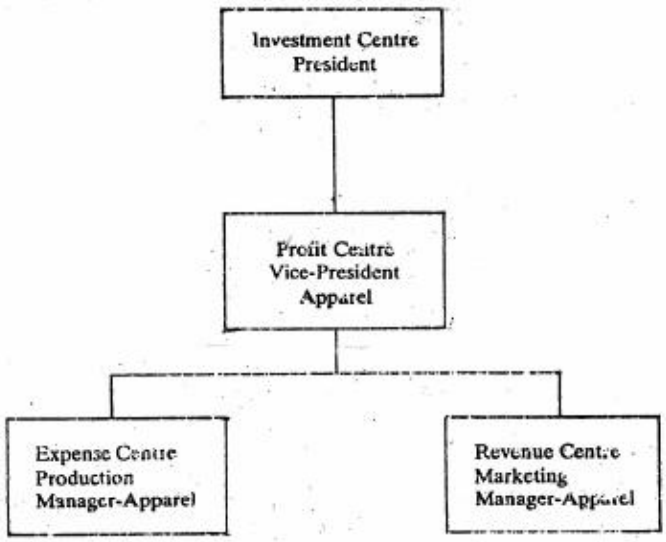
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It should be noted that a responsibility centre does not stand in isolation in the organisation. For example, in the above illustration the performance of the investment centre, that is, the President, is intimately related to the performance of the 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 one another. 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.

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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.

Uttar Pradesh
Rajarshi Tandon Open University

Management Control Systems

Block

2

MANAGEMENT CONTROL STRUCTURE

UNIT 3

Expense Centres 5

UNIT 4

Profit Centres 15

UNIT 5

Transfer Pricing 25

UNIT 6

Investment Centres 35

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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 experse responsibility centres.

Structure

3.1 Introduction
3.2 The Concept of Expense Centre
3.3 Distinction Between Expense Centre and Responsibility Centre
3.4 Controllability of Expenses
3.5 Responsibility Reporting
3.6 Summary
3.7 Key Words
3.8 Self-assessment Questions/Exercises
3.9 Further Readings

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 Respopsibility 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 shuld 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

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 f...ishing and packing.

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

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. 150
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

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
4.2 The Role of Profit Centres in an Organisation
4.3 Boundary Conditions for Profit Centres
4.4 Performance Measurement of Profit Centres
4.5 Profit Centre as a Motivational Tool
4.6 Performance Related Compensation
4.6 Summary
4.7 Key Words
4.8 Self-assessment Questions/Exercises
4.9 Further Readings

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



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, whicl. 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



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

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 saving of 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.



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

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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
6.2 Investment Base
6.3 Measuring Investment Centre Performance
6.4 Measuring the Investment Base
6.5 Problems of Financial Control of Investment Centre
6.6 Summary
6.7 Key Words
6.8 Self-assessment Questions/Exercises
6.9 Further Readings

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.

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 develop nents and personnel development of the divisions which may have an impact of deflating ROI or RI cut 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.

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 demeri's.

3 What problems are like'y 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
	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



NOTES

Uttar Pradesh
Rajarshi Tandon Open University

PGDFM-02

Management Control Systems

Block

3

MANAGEMENT CONTROL PROCESS

UNIT 7

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Performance Evaluation 41

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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
7.2 Classification.
7.3 Process of Budget Setting
7.4 Flexible Budgeting.
7.5 Manufacturing Budgets
7.6 Administrative Budgets.
7.7 Marketing Budgets
7.8 Budgeting with Net Work Analysis
7.9 Performance Budgeting.
7.10 Zero Base Budgeting
7.11 Summary.
7.12 Self-assessment Questions/Exercises
7.13 Further Readings

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 conditions and one level of activity, flexible budgeting system attempts to develop a series of budgets 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. As 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
(- rice 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

- 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 or 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.

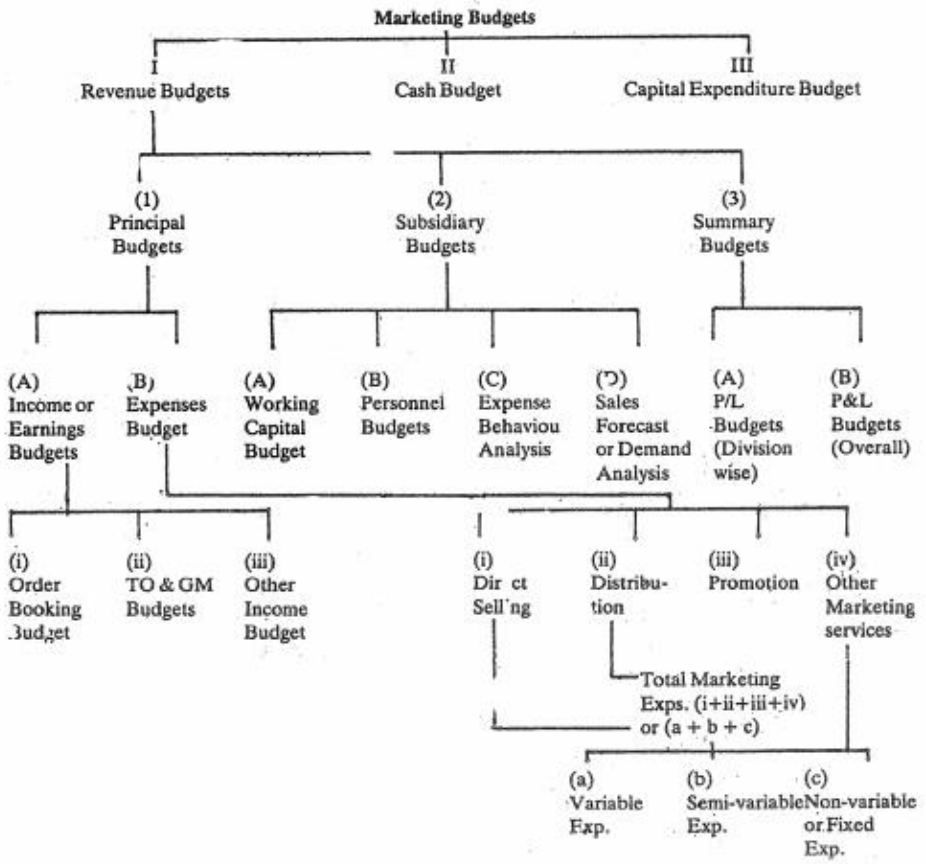
7.6 ADMINISTRATIVE BUDGETS

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+F–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 purpose is to codify and not to elaborate. The technique by its well-established method, brings about 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 un'ess 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

in 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.

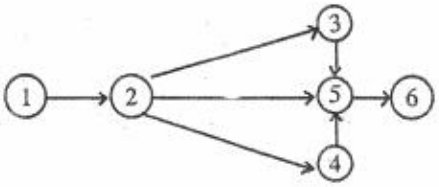
Initial work on the network can start at any time after the completion of the last cycle but as the majority of the deadlines will depend on the assurances given by the contributors, final arrangements should be confirmed as near as possible to the starting date. Taking working days as the unit of measurement, 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 over 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 c i 'cal 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 considerable degree of unpredictability are the difficulties which are likely to arise out of changes in that plan. Network completion as one o the varieties of activity planning is no exception. Since the object of using the ne work 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 c anges 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 performance 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.

e) **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 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 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	15
$12000 \times \frac{125}{100}$	
	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

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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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 condition 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 basi 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
8.2 Meaning and Significance of a Report
8.3 Different types of Reports
8.4 Report Preparation
8.5 Meaning and Implications of MIS
8.6 Need for MIS
8.7 A Few Myths about MIS
8.8 MIS and Computers
8.9 Management and Information System
8.10 Design and Implementation of MIS
8.11 Impact of MIS on Management
8.12 A Systematic Presentation of an Integrated Approach
8.13 Decision Support System
8.14 Summary
8.15 Self-assessment Questions/Exercises
8.16 Further Readings

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.

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	Perio-dicity	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. Lastely, 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, Receivab'e, 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

Short-Range Planning & day to day periods) scheduling	Budgets (broken down into short periods)	Operational Control	Productivity Techniques	1) Operational performance or 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

OPERATING (SUPERVISORY)

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.



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
9.2 Importance to Management
9.3 Impersonal/Personal Orientation
9.4 Measuring Performance
9.5 Multiple Performance Criteria
9.6 Designing Performance Evaluation Report
9.7 Responsibility Accounting and Managerial Accountability
9.8 Divisionalisation
9.9 R.O.I. Approach
9.10 Interdivisional Pricing
9.11 Corporate and Interdivisional Charges
9.12 Effective Use of Management Accounting System
9.13 Compensation for Divisional Performance
9.14 Measuring and Controlling Performance in a MBO Framework
9.15 Summary
9.16 Self-assessment Questions/Exercises
9.17 Further Readings

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 systems, 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 pers nal 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, pro uction 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	20
	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 an 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:

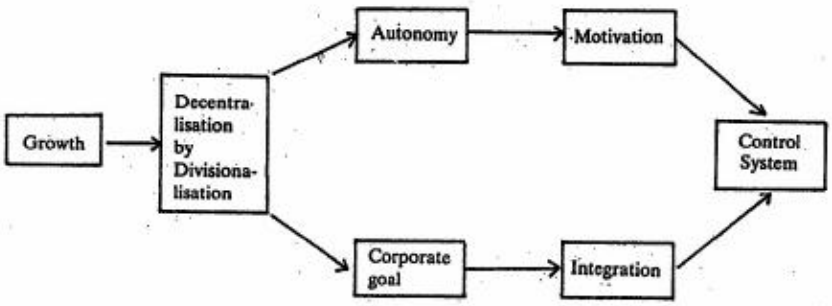
a) Capabilities of operating manager;

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) frc m 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 both 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
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....
.....	.....

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

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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 bra k s 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 shortcomings 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 underutilised.

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.

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Block

4

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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 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 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.



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 such independence, there is always a need for integrating the operations of local subsidiaries with a view to achieve overall optimality for the parent company. This optimality may be 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 stronger the company will become a multinational company. Some of the global pull factors and regional pull factors are given below:

Global Pull Factors	Regional Pull Factors
Strong comparative advantage in production	Strong restrictions in movement of 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:

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ii) Percentage of shareholding held by the parent company:

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ii) Nature of business of the parent company and the subsidiary company:

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iv) What changes the subsidiary has undergone with regard to range of products, number of plants and their location, technology, and organisational matters:

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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

$$ROI_{st} = \frac{R_t + U_t}{I_{st}}$$

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_{st} = 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.

$$C_0 = \sum_{t=1}^{n} \frac{R_t}{(1+r)^t} + \sum_{t=1}^{n} \frac{U_t}{(1+r)^t} + \frac{I_n}{(1+r)^n}$$

Where, C_0 = 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 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 influenced by a variety of complex factors, it is difficult to make accurate assessment of such risks. Many MNCs therefore follow subjective methods in judging these risks and take decisions to invest or not to invest. Other companies which favour seizing the opportun[illegible] 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 poss[illegible]le. 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?

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ii) What reports are floated to enable the parent company to assess the performance of the subsidiary as an economic entity?

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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 accou

In preparing profit and loss accoun 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 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 headquarters and the subsidiary's country office and also due to lack of direct observability of subsidiary'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 differ-nt.

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 cur ent 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 pul' actors: 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
11.2 Project Defined
11.3 Project Characteristic and Management Control
11.4 A Typical Project Organisation
11.5 Structure of a Multi-project Organisation
11.6 General Approaches to Designing Project Organisations
11.7 Project Planning and Control Techniques
11.8 Sub-contracting and Control
11.9 Control Indicators in Multi-project Organisations
11.10 Role of Review Process
11.11 Summary
11.12 Key Words
11.13 Self-assessment Questions
11.14 Further Readings

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 a specific project it can be helpful in designing the parameters of progress. The 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

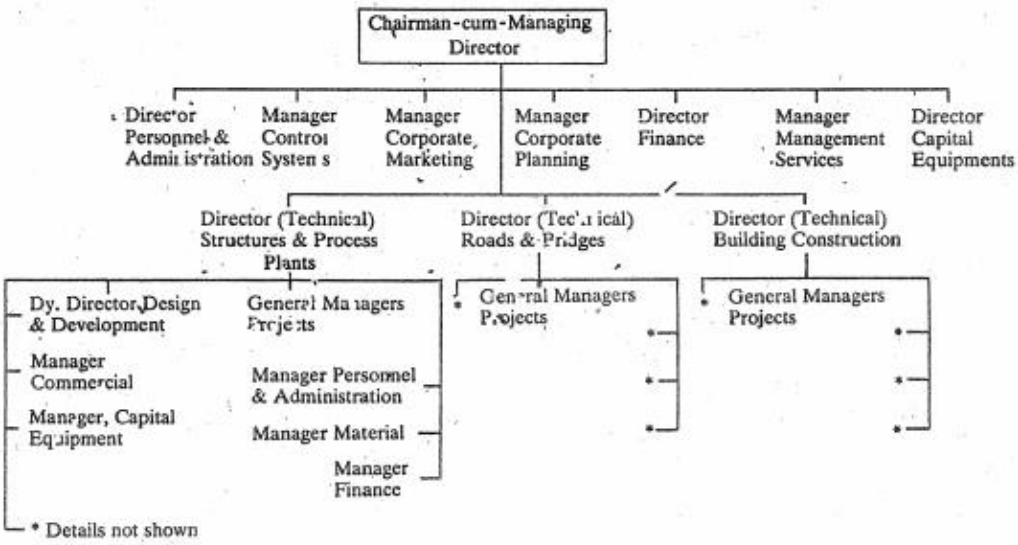
the projects are contracted out either because of the unavailability of proper skills within the project to accomplish such task or because such task can be completed at a lower cost by outsiders. To negotiate with the outsiders and to do the follow-up with them in regard to quality, delivery schedule etc., a position of Manager of Contracting becomes necessary.

The functional managers who work under the GM(P) generally are Manager (Personnel), Manager (Finance), Legal Officer, etc., Organisationally, 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 his 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.

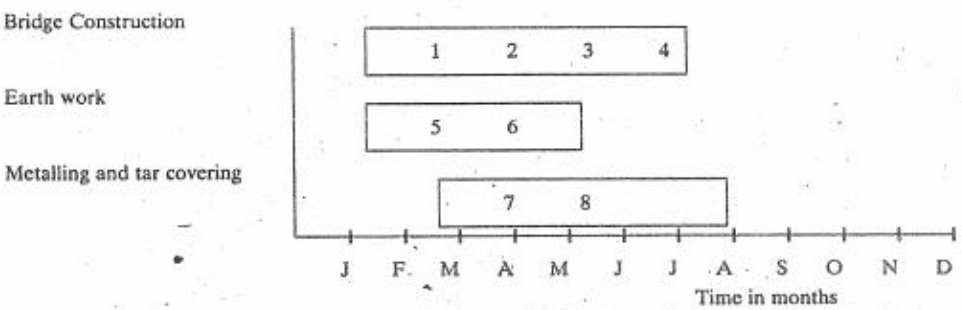
Task-Force Organisation: A project task-force organisation is formed by drawing personnel from different parts of the main organisation who work on full time basis or priority basis on the project. In this case they generally receive their administrative support from the main organisation. A task force 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) $\frac{\text{Actual physical work done by time X}}{\text{Physical work planned by time X}} > \text{or} = 1$

2) $\frac{\text{Actual work done}}{\text{Work planned}} > \text{or} = 1$ s.t. actual expenditure $\leq$ budgeted expenditure

3) $\frac{\text{Actual work done}}{\text{Actual cost}} > \text{or} = \frac{\text{Budgeted work}}{\text{Budgeted cost}}$

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:

$$\text{Quality Index} = \frac{\text{Cost of rework} + \text{Compensation due to poor quality}}{\text{Value of project}}$$

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.

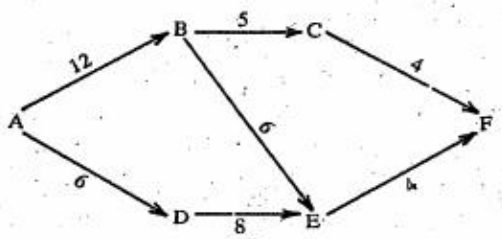
Network technique (PERT): Project planning and control through Programme Evaluation and Review Technique (or PERT) is a very common phenomenon today. Under this method a project is divided into a number of activities and the time requirement for these activities as well as relationship between the activities 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 created 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 employed 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 characteristics 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

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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
12.2 Characteristics of Services
12.3 Equipment and People Orientation in Services
12.4 Design Considerations in High and Low Contact Services
12.5 Management Control in Professional Firms
12.6 Management Control System in Hospitals
12.7 Management Control in Hotels
12.8 Management Control in Banks
12.9 Some Trends of Change in Service Industry
12.10 Summary
12.11 Key Words
12.12 Self-assessment Questions
12.13 Further Readings

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 [illegible] 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:

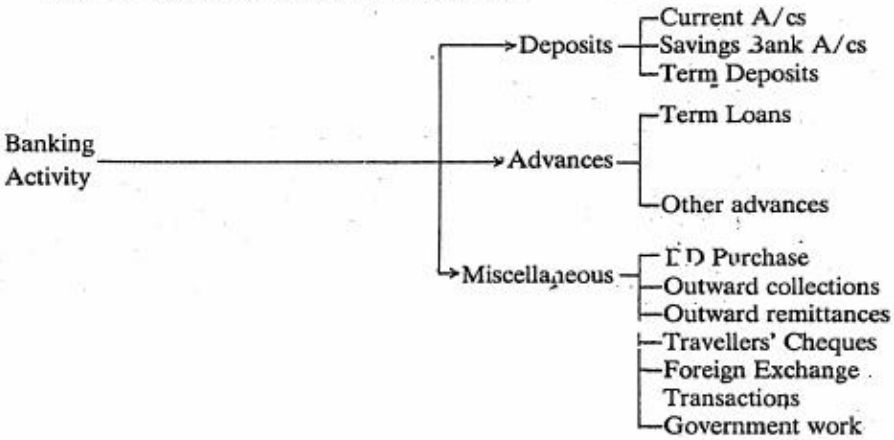
- What would be the level of operations a certain years hence?
- How will the organisation structure look like at that time?
- What is the time requirement for developing people from inside to man this structure?

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 bee.: 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 mechani-al 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 (credit 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.

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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 form 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
Fire service
Advertising service
Architect's service
Tax consultancy
Solicitor's firm
Management consultancy
Airlines business
Transport agency
Travel agency
Computer service
Medical consultancy
Household service
Hotel
Insurance service

12.13 FURTHER READINGS

Ashton, G., 1975, 'Quality Control in a Service Business', *Harward Business Review* July-August.

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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
13.2 Service Organisations and Non-profit Organisations
13.3 Categories of Non-profit Organisations
13.4 Profit and Non-profit Organisations: Differential Characteristics
13.5 Measuring Output
13.6 Pricing in Non-profit Organisations
13.7 Management Structure in NPOs
13.8 Control in NPOs
13.9 Accounting in NPOs
13.10 Summary
13.11 Key Words
13.12 Self-assessment Questions
13.13 Further Readings

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 measures, each of which intends to measure results on one of the objectives. There is generally 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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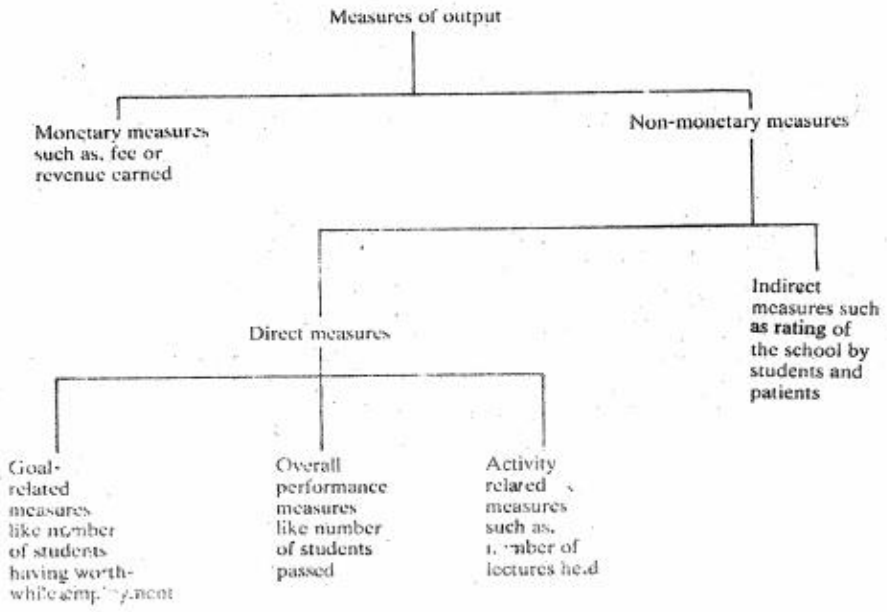
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13.5 MEASURING OUTPUT

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 prices, (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 levels 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 would be at full cost price. Thus subsidized 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: Pricing 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 [illegible] 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 to market 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. Based on

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

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.

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NOTES

CASE STUDIES

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Christian Medical College and Hospital, Vellore 44-62

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Dakshin Rasayana Nigam Limited
Case (1980) prepared by Mr. B. Ramamurthy, Research Associate
under the guidance of Prof. V. Govindarajan
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Bengal Steel Limited
Case (1967, Revised 1972) prepared by Prof. S.K. Bhattacharya and K.L. Varshneya
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Jalabhumi Nutritional Programme (A)
Case (1975) prepared by Prof. J.C. Camillus.
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Thana District Co-operative Fisheries Project (B)
Case prepared by Prof. K.L. Varshneya
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Christian Medical College and Hospital, Vellore
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BROOKE BOND (INDIA) LTD. (A)

Brooke Bond (India) Limited (BBI), a FERA company in the Unilever fold, has come a long way since it began operations in India way back in 1912. The 77 - year-old company was incorporated in Calcutta under the name of Brooke Bond & Company (India) Limited with the twin objectives of introducing packaged quality teas to the Indian consumer and also of exporting bulk teas. The early product lines included *Black Label, Violet Label, Green Label, Red Label* and the popular *Kora Dust.*

Brooke Bond (India) Ltd. has been described as the world's largest tea marketing company by its executives. The company saw a period of growth and expansion during 1927-67 and it introduced new products, including coffee in conventional powder form. The company's main products are tea, coffee, and instant coffee. Tea accounts for well over 70% of the company's sales and profits. Apart from tea and coffee which together accounted for an estimated 95% of the pre-tax profits of the company for the year 1981-82, Brooke Bond managers are trying their best to establish other lines of business — meat and leather exports, paper, oleoresins, spices and blades.

Marketing and Purchasing Operations

To reach a large consumer base, the company in its initial stages set up a wide marketing organisation involving distributors and agents all over the country which, however, began gaining ground after 1940. The direct selling system — known as the depot system — is supposed to establish a permanent bond between BBIs salesmen and the retail outlets.

The impressive volume of branded or packaged tea is presently marketed by a large sales force of 1,352 salesmen, 100 controllers, 27 area sales managers, 27 deputy area sales managers and 6 zonal sales managers — "the largest corporate sales force in the world" — servicing 6,35,856 retail outlets (including 1,50,000 hot tea shops) in 20,000 towns through 1,352 company-owned depots. Contrary to popular opinion, 70% of the company's sales are in the rural areas and the "world's largest corporate sales force also markets the world's cheapest branded article — the 5 paise tea packet" which contributes 18% of the sales revenue of the tea profit centre.

Brooke Bond is the single largest buyer of tea for domestic consumption and its team of 16 purchasers bought 67 million kg. of tea in 1981-82 through its five buying centres located in Guwahati, Siliguri, Cochin, Coimbatore and Calcutta. After the tea is purchased, it is despatched to the company's six factories (where 4,300 employees including 80 executives work) for blending and packaging. The six factories are situated in Calcutta (West Bengal), Tundla (Uttar Pradesh), Kanha (Maharashtra), Jamnagar (Gujarat), Ghatkeser (AP) and Coimbatore (TN).

For a packet tea company such as BBI the emphasis is not so much on quality as it is on standardisation. When the quality of the teas available in the auctions changes, the company has to vary its blends to maintain consistency in price and quality. Maintaining the consistency of branded tea is considered to be the primary function of BBI so that consumers — most of whom are loyal to a brand for years at a stretch — do not complain of a deterioration in quality. The job of the production department in the tea profit centre is therefore to carefully store and blend the tea as per the branding sheets received from the tasters, to package them in various packet sizes and despatch them to the various depots as per indents received.

According to the company's Marketing Director, "The style of marketing is organic and unique and quite distinct from that of any other organised sector company in India." The marketing modus operandi has two unique features. Firstly, the company has a direct system of selling which completely eliminates the wholesalers and the middlemen. All the 6.5 lakh retail outlets are supplied directly by the salesmen with the aid of a fleet of 1,000 vehicles ranging from motorized vans down to bicycles and mule carts. Secondly, all sales are cash sales and the company has no outstandings.

BBI's direct selling system is quite expensive because the average wage packet of the company's 1,352 salesmen is an impressive Rs. 2,400 per month (40% of which is earned by way of incentives). Several officials of the company believe that the direct selling system is the best system for the promotion of low price consumer goods. It eliminates outstandings and wholesalers' discounts. The direct selling system offers the quickest way to distribute a product and ensures a degree of attention to promotion of brand and corporate image that no wholesaler can possibly provide. For example, it could hardly be worthwhile for a wholesaler to promote the five paise tea packet which the company believes is the world's cheapest branded product, as his margin would be extremely small. Paradoxically, this product contributes almost 18%

Case (1989) prepared by Dr. M.L. Bhatia, Member of the Faculty, School of Management Studies, IGNOU.

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of the sales revenue of the tea profit centre. While the company's direct selling system and its gigantic field force is regarded as the major strength, some officials believe that it could prove to be its **Achilles heels**. The company believes that the cost of direct selling per product will be reduced as the company diversifies into low cost consumer products such as instant coffee, spices, blades, etc.

Marketing Environment

The average price of tea in London auction plummeted from an all time high of 156.3 pence (Rs.26.59) per kg. in 1977 to an average of 107 pence (Rs. 18.19) per kg. during the first half of 1982. The total production in India which yields 32 per cent of all the tea production in the world has increased only marginally from 556 million kg. in 1977 to 561 million kg. in 1981. With Kenya — a major exporter of tea — having opted out of International Tea Agreement which was painstakingly hammered out to allocate quotas to the tea exporting nations and with the entry of China into the world market for tea, around the corner, the future of Indian tea exports (which accounts for 43 per cent of its production) looks distinctly gloomy. Thus, the tea activity which accounts for well over 70% of the company's sales and profits is plagued with uncertainties, particularly on the profitable export front.

For BBI — a company which blends and markets packet or branded tea — the main competition in the domestic market comes from the cheaper unbranded tea which is sold loose in the market place. In 1981-82 the company sold the same volume of tea as in 1971, but its market share vis-a-vis loose tea is now much less. During this period the total share of packet tea has come down from 45 per cent to 30 per cent with a corresponding gain for loose teas. Though 1981-82 was considered a year of recovery and the company recorded a notable gain in sales volume, it was a challenge for the company to sustain this trend.

In the instant coffee business, the company has been playing an uncomfortable second fiddle to Food Specialities Limited (Nestle) whose brands Nescafe and Ricori together command a 60 per cent share of the national market. BBI spokesmen attribute Food Specialities market dominance to its larger licensed capacity and to the fact that the BBI was obliged to suffer production capacity constraints. For several years the company was not given a licence to expand production. However, by mid 1982 the company's third instant coffee plant at Hosur (TN) will go on stream, augmenting the production of the company's instant coffee — chicory combination marketed under the brand name **Bru**.

Though the company has carved out a comfortable 16 per cent share in the national market for conventional coffee with their brands *Green Label Cafe* and *Family*, their real battle will now be fought against Food Specialities Limited (FSL) whose sales was to the order of Rs. 55.6 crores in the year ended 31 December 1981 — which is the Indian associate of the multimillion dollar multinational conglomerate Nestle Holdings Limited — Bahamas. The company executives claim that Brooke Bond instant coffee-chicori blend has a 40 per cent share of the national instant coffee market which puts it ahead of Food Specialities prime brand *Nescafe* which is supposed to have a 39 per cent market share. However, they concede that because Food Specialities coffee-chicori blend Ricory has a 21 per cent market share FSL has an aggregate market share of 60 per cent of the instant coffee market. How Brooke Bond compares with other similar companies is presented in Exhibit 1.

With the Hosur factory which is expected to go into production in June 1983, marketing plans to promote Bru with greater vigour and launch a pure instant coffee (yet unnamed) with a reported sales promotional budget of Rs. 30 lakhs per year are taking shape in Bangalore.

The Changing Profile

The Annual Report for the year 1981-82 states about the changing face of BBI in the following words :

> Change is a natural process of life. Without change, there would be no growth. In the life of a corporation too, change must come. Except that this process of metamorphosis cannot be an involuntary one. It must be controlled, channelised, carefully planned. It must depend on transformations taking place in the environment, the company's awareness of these changes and its ability to anticipate and mutate to meet the challenges of the future. Thus has it been with Brooke Bond. Today, Brooke Bond is a different Company from what it was a few years ago. Planned changes have been effected in the vital areas of holdings, operations, product mix and employment — an expression of corporate philosophy that has made the Company stronger, more dynamic, more responsive to the times.

Brooke Bond today is a multi-product, multi-divisional company, far removed from the beverage company that it was until the late seventies. A large measure of credit for masterminding and spearheading the company's diversification drive is given to T.S. Nagarajan (55) Vice-Chairman and Managing Director who supervises corporate planning and diversification function. A graduate of Banaras Hindu University, Nagarajan began his career in Hindustan Lever (1948-

50), moved on to Best and Crompton (1950-57) before joining BBI as a management trainee and rising swiftly through the managerial ranks to become a Director of the company in 1963.

According to Nagarajan, the diversification process has been spread out over three phases. The *first phase* began when the company made its diversification into the instant coffee business in pursuance of its perception that the demand for a product in a given market was neither constant nor inherent. It was the availability of a product in the market place that stimulated demand. This belief was put to test in the instant coffee market for which the national demand at that time was 200 tonnes per year. Today the company's production of instant coffee-chicori blend is 1,600 tonnes per year and the demand for this blend and Bru exceeds supply.

A *second phase* in the company's diversification process began in the mid-seventies after the Foreign Exchange Regulation Act, 1973, was enacted and the equity shareholding of the parent company, the London based Brooke Bond Group plc, was reduced from 100 per cent to 40 per cent in 1977-78. Under the provision of the Act, the company's future expansion had to be in relatively high technology areas or in the export sector. It was in this context that the company set up its meat export project in Aurangabad at a capital cost of Rs. 7.50 crores in 1976. In the year ended 27th June, 1981 the company's meat exporting plant exported 6.25 million 340 gr. cans of corned (buffalo) meat valued at Rs. 4 crores. The meat is marketed in Britain and EEC countries. BBI's plant is regarded by the officials of the company as the first scientific meat processing plant set up in the country and is designed and integrated in such a manner that there is no wastage in operations. Even the effluent is used as fertiliser.

In the second phase of its diversification, the company also set up its oleoresins plant for export purposes, and an industrial machinery (printing and packaging) business which together recorded a sales turnover of Rs. 1 crore in 1981-82.

In the *third phase*, BBI set up a leather processing unit at Aurangabad, got its instant coffee plant at Hosur going by mid 1983 and set up a 15,500 tonnes per year paper manufacturing unit in Bilaspur, M-P. Of the recent diversifications, only the meat processing product is presently contributing to the profit pool of the company. The company's top management is convinced that the other diversifications, though currently at an incipient state, have very good potential.

The relevant excerpts relating to diversification projects of the company taken from the Directors' Report to shareholders for the period 28 June 1981 to 3 July 1982 are presented in Exhibit 2.

Operations and Performance

The BBI has a successful track record to its credit (see Exhibit 3). The company recorded an income of Rs. 217.24 crores for the financial year ended 3rd July 1982. The total income of the company has increased more than two-fold since 1971-72 and pre-tax profit has increased nearly three-fold. Though the exports since 1977-78 have declined, the company has been concentrating more on value-added exports (see Exhibit 4). The company's net worth which was Rs. 879 lakhs in 1967 has risen to Rs.3,002 lakhs by 1982. The financial highlights for the ten year period (1972-73 to 1981-82) are given in Exhibit 5.

The Finance Director of BBI thinks that the financial health of the company is excellent. According to him "one important yardstick of gauging corporate performance is to take a look at a company's post-tax return on net worth. It denotes the money for distribution to shareholders and available to the company for reinvestment. The company has earned a post-tax return on net worth of 18 per cent. The pre-tax profit in the recently concluded year which ended on 3rd July 1982 was 256 per cent higher than it was in1977-78. The sharp increase in profitability is attributed to higher employee and machine productivity, control of overhead costs and exports." Further, according to him, the company's debt equity ratio is a mere 0.1 : 1 against the IDBI's debt equity norm of 1:1 for non-capital intensive companies. The company's borrowals at Rs. 2.60 crores is only 1 per cent of its sales turnover of Rs. 212.69 crores in 1981-82.

Exhibits 6 and 7 present Balance Sheet and Profit and Loss Account of the company respectively.

Roger Ballester, who is President of the tea profit centre, attributes the improvement in sales and profitability on tea front to two factors. Firstly, there was an over production of tea and slackness in overseas demand. As a result the company was able to purchase tea from the auctions at a reasonable price. Secondly, the position of availability of sugar, which has a considerable bearing on the demand for tea, was comfortable.

Profit Centres : The Genesis

Earlier the organisation structure at BBI was based on functions. There were separate departments for managing factories, sales and markets, finance, commodity buying, etc. The responsibility for operating results to a great extent was diffused at senior management levels except for the collective responsibility for performance at the level of Board of Directors. According to the Chairman and Managing Director of the company, Mr. C.S. Samuel, this kind of

organisation was considered adequate, or perhaps effective, as long as business of the company was less complex and limited to tea and coffee. Mr. Samuel (53) has been the Chairman and Managing Director of the company since 1978. Earlier a Chief Accountant at Hindustan Lever Ltd. (HLL), Mr. Samuel, joined Brooke Bond in 1971 as Finance Director. Mr. Samuel is the main force behind restructuring the 60-year-old company.

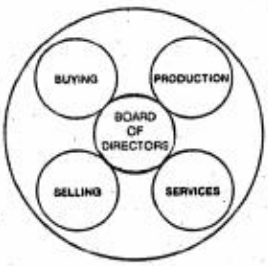
When the company commenced its meat project at Aurangabad, it found the need to make this unit a separate division to help identify the costs and profitability of the new project. At the same time, a group of people to work exclusively on the meat project was assigned and who could be held responsible for its performance and results. This development was the beginning of the concept of "profit centres" in the company.

When the company decided to go into the distribution of blades, the domestic marketing of spices, and with a third instant coffee plant, a leather unit and a paper project (which was round the corner), it felt the need to give these operations a more distinct identity. The responsibility for operations and results and accountability had to be clearly established at senior management levels.

FIGURE -1

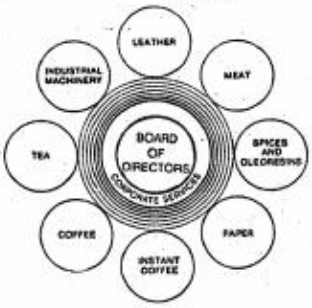
BBI : Past and Present

Past



In the past, the Company was organised according to functions and run as a single Profit Centre.

Present



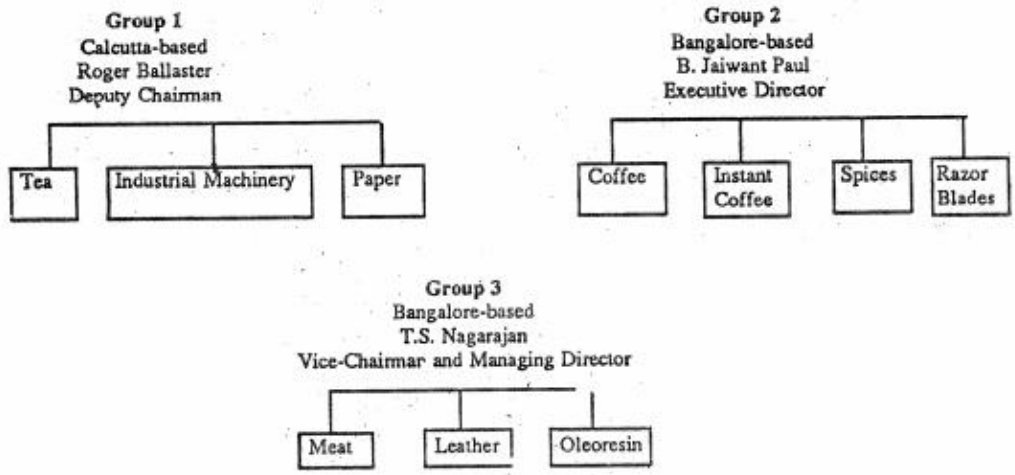
Since July 1981, decentralisation has taken place in order to manage the Company's widening spheres of activities more effectively. Now each product group forms a Profit Centre.

A structure whose effectiveness can be judged by the current year's performance.

Source: Company's Annual Report, 1982.

FIGURE - 2

Profit Centres at Brooke Bond India Ltd.



Source : Bhatia, Manohar L., 1986, Profit Centres : Concepts, Practices and Perspectives, Somaiya Publications, Bombay, p.235

The company gave serious thought to the opportunities presented by the profit centre type of organisation, on which by then the company had some encouraging experience with the meat operation. It took some months, however, to implement the reorganisation on a new pattern before it became fully operational throughout the organisation. Figure 1 captures the past and present of the company in sofar as the organisation structure and management control are concerned.

Profit Centre Structure

The profit centre organisation built around product groups is supported by service and advisory functions. The profit centres include all major operating activities which now act as separate organisational entities, each reporting to a profit centre head. Commodity purchase, Marketing and Production functions report to the head of each profit centre. These profit centres are supported by common services such as Finance, Transport and Distribution, Purchase of Packaging Material, and Advisory Service such as Technical and Secretarial. The services operates on a functional basis, serving all profit centres.

The ten profit centres, as shown in Figure 2, are aggregated into three groups, each headed by an Executive Director of the company. A brief overview of the performance of each centre for the financial year ending on 27th June 1981 is given below :

Tea : This is the major profit centre which contributed nearly 85% of the sales revenue and an estimated 80 of the pre-tax profits. The profit centre consists of Domestic Packet Tea, Domestic Bulks, Export Packet Tea, Export Tea Bags, and Export Bulks.

Industrial Machinery : This profit centre sold **gravure** cylinders and components, packaging and printing machines valued at Rs.24.54 lakhs. Only 30% of the industrial machinery is sold in the market place. 70% is produced for captive consumption.

Paper : The company's Rs.7 crore, 15,000 tonne paper manufacturing plant located at Bilaspur (M-P) is scheduled to begin commercial production by the end of 1983.

Meat : The wholly integrated buffalo meat processing plant located in Aurangabad (Maharashtra) at a capital cost of Rs.7.5 crores is the only one of its kind in the country and is a 100% export unit. Turnover of its products (Export Corned Beef, Frozen Beef, and Leather) amounted to a little over Rs. 6 crores. It has broken even.

Leather : In September 1982 an affiliated leather processing unit went into commercial production and will produce value added processed leather and, later on, shoe uppers for export.

Oleoresins : This profit centre which envisages the export of value added oil of resins, rather than the more bulky resin wood, has yet to get off the ground.

Coffee : Conventional coffee constituted half of total coffee volume (conventional and instant) sold during the year.

Instant Coffee : Company executives claim that their instant coffee-chicory blend **Bru** has a 40% share of the instant coffee market and, as indicated earlier, has been constrained from winning a larger market share only because of a delay in getting a licence to expand capacity. Currently the company's third plant with a production capacity of 750 tonnes per annum is taking shape in Hosur, Tamil Nadu, and is expected to go on stream by mid-1983.

Spices : The company is test-marketing packaged and branded spices in the domestic market. In the meanwhile it sold one crore rupee worth of spices in the export market.

Blades : Since 1979 the company has been marketing safety razor blades manufactured by the Centron Industrial Alliance Ltd., a Bombay-based unit with its factory in Aurangabad. This profit centre sold 35 million blades acquiring a 5.3% and 9% share in terms of units and value respectively of the Rs. 31 crores national market for razor blades.

The last four profit centres, comprising Group 2 accounted for 21% of the company's pre-tax profit.

As for 1981-82, the tea and two coffee profit centres (conventional and instant) contributed an estimated 95 per cent of the pre-tax profit of the company. Thus the other profit centres are relatively speaking small potatoes for Brooke Bond. As indicated earlier, the meat processing project is the largest and contributes a turnover of Rs. 6 crores and it has broken even. The razor blades profit centre which has been marketing blades manufactured by the ailing Centron Industrial Alliance Limited, Bombay, under the brand name Swish Stainless, Supper Swish Silver, Steelex and Platinex made a contribution of Rs. 3 crores. But the future of this profit centre is dependent upon whether the company's proposed merger with Centron, stymied by the powerful Malhotras who dominate the indigenous razor blade industry, goes through. Thus, for the present management's ambitious plan to merge the ailing Centron into the company has been stymied by a host of legal and bureaucratic hurdles.

The company's packaged spices business is still at the test marketing stage. The company's leather plant commenced production in September 1982 and the paper manufacturing project will become operational at the end of 1983.

Profit Centres : Practices and Procedures

The following are the salient features of profit centre structure at BBI and the practices and procedures followed:

Interdependence: The profit centres at Brooke Bond are independent, except the leather profit centre which is dependent upon the meat profit centre for its input, viz. hides which are transferred at the current market price. There is no need for transfer pricing for other profit centres.

Method of Determining Profits: The procedure for determining profits of profit centres is:

a) All the variable expenses are changed against the specific income of each profit centre.

b) Presently, depreciation is charged to profit centres on the same basis as is being used for income tax purposes. However, the company is contemplating to provide depreciation on "Replacement Cost" basis in near future.

c) All fixed expenses, where they are easily ascertainable, are again specifically charged to products.

d) The remaining indirect overheads, including support and advisory services, are allocated to all profit centres on a "reasonable basis". The methods used depend on the type of services that are being rendered by the department concerned. All such allocations are clubbed together under "Indirect Overheads".

e) Interest charges are notionally debited to profit centres on the basis of Gross Working Capital employed.

Goals and Targets: The methods (or yardsticks) used for measuring the performance of profit centres for the purpose of evaluation are : (a) Profit before interest and income tax (absolute amount), (b) ROI percentage, (c) Percentage of contribution to sales, (d) Percentage of profit to sales, (e) Investment to turnover — times, and (f) Residual profit (i.e., after notional interest but before income tax).

Determination of Investment Base : The investment base of profit centres (technically, investment centres) for the purpose of ROI calculation is determined by taking fixed assets at the original cost which is assumed to equate very closely to the next replacement cost for the rest of the useful life of the assets. To this is added the working capital on gross basis, i.e., without deducting sundry creditors and other current liabilities.

A Climate of Optimism

The Chairman and Managing Director of the company stated that the reorganisation of management structure (by product groups rather than by function) permitted it to act more independently. At the same time, it permitted this independence within an umbrella of corporate objectives and policies, determined by the Board of Directors. The independence permitted the profit centres to finely tune their operations to profitability in their own product groups, whether in commodity buying or marketing, production or development. This independent approach, according to the Chairman, had already started showing results though it was barely nine months since the change was introduced. "Each profit centre was now working on new ideas of their own, with greater relevance to their problems and opportunities. There was an understandable , even desirable, competitiveness between them which, of course, was held in balance so that the benefit was to the overall company interest. The new organisation presented the company a new dimension in its attempt to maintain growing profitability with diversification. The profit centres have generated a new enthusiasm. There is also a new aggressiveness about how they operate, fully justified by the results they produce."

Shifting of Headquarters

In order to make the functioning more effective, the headquarters of smaller profit centres : Coffee, Instant Coffee, Blades and Spices were shifted (though not to the liking of Marxist Administration of West Bengal) to Bangalore where the Corporate Office is now located. The change of location was justified by the Chairman & M.D. for its being closer to commodity sources and major markets. "It has produced an independence and impact to our expectations, and far in excess of what could have been possible if they had stayed in Calcutta. The profit centres, which are now small, are also our hopes for the future. So it is important that they receive the attention they now get for these operations. The shift to Bangalore has helped provide the attention which we hope will also assure future growth."

The tea profit centre, on the other hand, described as the backbone of the company's operations was allowed to stay in Calcutta which is the major centre for tea. Similarly, the paper project, which is more accessible from Calcutta, as well as Machine Building which is located at Calcutta, continue to be managed from there. Overall, therefore, the Chairman and M.D. exhorted : "We have combined the necessities of geography and business conditions with the organisational needs of the company for today and tomorrow." The Chairman decided to operate from both Bangalore and Calcutta. With his confidence in the Heads of profit centres, he hoped he would have less to do with the operations of individual profit centres and thus pay still more attention to overall corporate growth.

As the reorganisation involved relocation and shifting of staff from Calcutta to Bangalore, there was an understandable initial reaction from the employees to the changes. However, no member of the staff was forced to move, and no employee was retrenched because of the move. With understanding and accommodation shown on both sides, it was possible to

effect the changes without unhappiness. The shifting of the headquarters to Bangalore has been effected with unusual smoothness and without disturbing the tempo of the company's operations.

The shifting of the company's headquarters from the chaos of contemporary Calcutta to the more salubrious environment of Bangalore has coincided with the completion of a full year since the erstwhile functional structure was thoroughly overhauled in June 1981. Thus the company's recently concluded financial year (1981-82) was its first as an organisation divided into ten profit centres and organised for administrative convenience into three major groups (see Figure 2). "The sales and profits in the first year after the structural reorganisation have zoomed.

The improvement in the operating results was stated to be not only the consequence of a notable recovery in the domestic (tea and coffee) market but it also "reflects the effectiveness of the corporate reorganisation completed in 1981," said C.S. Samuel. "The marked improvement not only reflects the effectiveness of the major corporate reorganisation but also the theory lying behind it."

Personnel and Industrial Relations

The immediate challenge before the top management is to groom inhouse and recruit new managerial talent to man the ten profit centres that have sprung to life consequent upon the restructuring of the company in 1981. Over the next five years the company is likely to experience a large number of senior level retirements even as it is expanding the range and breath of its operations. After five years, over 50 per cent of BBIs executives will have less than five years experience in the company. The challenge before the management is to preserve the healthy traditions of the company as relatively new recruits move into top and middle level positions.

The company's Employees Federation has had the good sense to steer clear of all political parties. Fortunately, for all the constituents of the company, the apex level leadership from the very beginning, has been provided by N.M. Barot, a leading light in the Mazoor Mahajan, Ahmedabad, founded by Mahatma Gandhi at the turn of the Century. The influence of Barot and the Mazoor Mahajan has kept industrial relations in BBI on an even keel.

Questions

1 What triggered the introduction of profit centre system in BBI? Was the adoption of the profit centre structure, in your view, at the right time? Should the BBI have waited for some more years so that its recent diverse activities attained a level of maturity before introducing the concept of profit centres.

2 What are your comments on the practices and procedures regarding
   i) determination of profitability and ROI of Profit (or Investment) Centres, and
   ii) measuring of the performance of Profit Centres.

3 Evaluate the strategy of the company and its recent diversifications.

4 Do you share the optimism of the Chairman of the Company?

5 What are some apparent strengths and weaknesses of BBI? Comment on the
   i) Direct Selling System of the Company (should it be changed in favour of distribution through intermediaries?); and
   ii) Performance of the company.

EXHIBIT-1

HOW BROOKE BOND COMPARES

	Year ending	Net Sales (Rs. crores)	Profit before tax (Rs. crores)	Profit after tax Net worth (%)	Return on capital employed (%)	Total liabilities Net worth (%)
Brooke Bond	30-6-81	179.69	10.64	19.13	18.21	150
Liton	30-6-81	69.90	(2.46)*	–	–11.66	1157
Food Specialities	31-12-81	55.65	6.70	31.75	28.39	92
Hindustan Lever	31-12-81	533.65	41.42	21.36	18.95	145
Voltas	31-8-81	273.18	8.90	25.53	17.94	582

* Loss

Source : Stock Exchange Official Directory.

EXHIBIT - 2

DIVERSIFICATION AT BBI

MEAT

There was a general decline in prices on the international meat market and the unit realisation was comparatively lower than the previous year. During the year, shipments to Egypt—our major market remained suspended, but have now resumed.We received another welcome order from Romania for an additional 1,00,000 cases valued at Rs. 190 lakhs. The major part of this order was executed during the year, but unfortunately could not be completed because of a trade balance problem between India and Romania. This has now been resolved and shipments are expected to be resumed shortly.

Steps, considered essential by the UK /EEC authorities for import of meat into these countries, have now been taken by the Government of India for implementing meat inspecting procedures in our Aurangabad Plant. Representatives from the UK are expected to visit our meat plant soon for a final approval which should open up considerable opportunity for marketing our corned beef to the UK — a major consumer.

LEATHER

The leather finishing plant at Aurangabad was commissioned on schedule in June 1982. The finished products from the plant covering Safety Prints, Upholstery and Softy leather were developed and displayed at the Paris Leather Fair and evoked considerable interest and response. The unit is now geared for regular commercial production.

INSTANT COFFEE

Our plans to commission the third instant coffee plant at Hosur by June 1983 are progressing satisfactorily. We are taking suitable steps to meet our commitments to the Government on the introduction of a pure instant coffee in the domestic market and to export 50% of the production from the Hosur Plant.

PAPER MILL

Civil construction works at Bilaspur site are progressing satisfactorily. Imported paper machine has been received at site and work for overhauling and minor modifications is being taken up. Orders for the indigenous plant and equipment are being placed progressively. Barring any unforeseen developments, the paper mill is expected to be commissioned by December 1983.

CENTRON MERGER

In January 1982, the Company received the approval of the Central Government under Section 23(2) of the MRTP Act, 1969. Harbans Lal Malhotra & Sons Limited, a company engaged in the manufacture and distribution of razor blades filed an appeal in the Supreme Court and obtained a Stay against the operation of the order of the Central Government. The Supreme Court admitted the appeal but vacated the Stay.

The proceedings for sanction of the Scheme of Merger are currently in progress before the Bombay and Calcutta High Courts. The State Industrial & Investment Corporation of Maharashtra and the United Commercial Bank who initiated the proposal of merger of Centron with the Company and voted for the Scheme of Merger at the meeting on 27th January, 1981 held under the direction of the High Court in Bombay have now chosen to consider an alternate Scheme offered by Malhotras.

During the year Company has maintained a satisfactory level of sales of blades manufactured by Centron.

Source : Company's Annual Report , 1982.

EXHIBIT - 3

BBI : TRACK RECORD

Year	Total Income	Pre-tax Profit
1971-72	96.49	4.90
1972-73	101.98	5.12
1973-74	119.93	5.96
1974-75	142.22	4.47
1975-76	159.86	5.33
1976-77	188.32	4.58
1977-78	182.20	5.06
1978-79	183.65	8.59
1979-80	195.86	10.11
1980-81	183.28	10.64
1981-82	217.24	12.96

Source : Company's Annual Report for various years.

EXHIBIT - 4

BROOKE BOND (INDIA) LTD.

Exports

Year	Rs. (in lacs)	Value added Export (in lacs)
1977-78	4,356	–
1978-79	3,532	1,236
1979-80	3,771	1,716
1980-81	3,402	1,838
1981-82	3,167	1,820

Source : Company's Annual Report for various years.

EXHIBIT - 5

BROOKE BOND (INDIA) LTD.

TEN YEAR'S FINANCIAL HIGHLIGHTS

Rs in lakhs

	1981-82	1980-81	1979-80	1978-79	1977-78	1976-77	1975-76	1974-75	1973-74	1972-73
WORKING RESULTS										
Total income	21724	18579	19586	18365	18220	18832	15986	14222	11993	10198
Total Expenditure	20428	17515	18575	17506	17714	18374	15453	13775	11397	9686
Profit Before Taxation	1296	1064	1011	859	506	458	533	447	596	512
Profit After Taxation	576	529	451	374	247	181	139	167	214	204
Proposed Dividend	340	303	303	216	171	160	134	134	74	134
Retained Profits	236	226	148	158	76	21	5	33	140	70
TOTAL ASSETS										
Gross Fixed Assets	2281	1826	1785	1741	1525	1273	1041	966	947	920
Net Fixed Assets	1282	916	970	1017	894	722	533	502	528	548
Investments	19	19	19	19	12	4	5	5	5	5
Current Assets, Loans and Advances	5988	5978	6552	5172	5542	4774	3584	3688	3313	2558
Total Assets	7289	6913	7541	6208	6448	5500	4122	4195	3846	3111
BORROWINGS AND LIABILITIES										
Secured Loans	371	810	1278	757	1597	1095	691	805	701	437
Unsecured Loans	808	794	800	542	341	86	163	19	122	137
Current Liabilities and Provisions	3108	2543	2924	2518	2383	2288	1608	1716	1395	989
Total Borrowings and Liabilities	4287	4147	5002	3817	4321	3469	2462	2540	2218	1563
NET WORTH										
Share Capital	1512	1512	1512	1512	1424	1409	670	670	670	670
Reserves and Surplus	1490	1254	1027	879	703	622	990	985	958	878
Shareholders' Fund	3002	2766	2539	2391	2127	2031	1660	1655	1628	1548

Source : Company's Annual Report, 1982.

EXHIBIT - 6

BROOKE BOND INDIA LTD.

BALANCE SHEET AS AT 3RD JULY 1982

LIABILITIES		Rs. Lakhs 1982	1981	ASSETS		Rs. Lakhs 1982	1981
Share Capital	(1)	1512.21	1512.21	Fixed Assets	(6)	1282.25	916.41
Reserves and Surplus	(2)	1490.13	1253.98	Investments	(7)	18.72	18.84
Secured Loans	(3)	370.94	810.15	Current Assets	(8)	5216.03	5557.44
Unsecured Loans	(4)	807.84	793.35	Loans and Advances	(9)	771.56	419.88
Current Liabilities and Provisions	(5)	3107.44	2542.88				
		7288.56	6912.57			7288.56	6912.57

Source : Company's Annual Report, 1982.

EXHIBIT - 7

BROOKE BOND (INDIA) LTD.

PROFIT AND LOSS ACCOUNT FOR THE 53 WEEKS ENDED 3RD JULY, 1982

		Rs. Lakhs 1982	1981
Income			
Sales	(10)	21269.68	18220.47
Other Income	(11)	454.86	358.88
		21724.54	18579.35
Expenditure			
Materials	(12)	12352.43	10628.36
Expenses	(13)	7711.92	6552.83
Interest	(14)	260.67	266.59
Depriciation		91.06	95.25
		20416.08	17543.03
		1308.46	1036.32
Provisions Made			
Doubtful Debts and Advances		14.75	3.53
		1293.71	1032.79
Provisions Withdrawn			
Doubtful Debts and Advances		1.76	9.04
Contingencies		–	22.00
Profit on Disposal of Assets		0.93	0.41
Profit before Taxation		1296.40	1064.24
Provision for Taxation	(15)	720.00	535.00
Profit after Taxation		576.40	529.24
Development Rabate Reserve Written Back	(16)	14.00	2.50
		590.40	531.74
Appropriations to			
Investment Allowance Reserve		29.00	9.00
Proposed Dividend (subject to deduction of income tax)		340.25	302.44
General Reserve		221.15	220.30
		590.40	531.74

Source: Company's Annual Report, 1982.

CASE 1

DAKSHIN RASAYANA NIGAM LIMITED

Dakshin Rasayana Nigam (DRN) is a large public sector undertaking based in Tamil Nadu set up for the manufacture of urea and other complex petrochemicals. It has five plants each of which is treated as cost centre. This case relates to the secretarial and legal department of the company. This department is situated at the corporate headquarters in Madras. As indicated in the organization chart (Exhibit 1), the head of this department Mr. Sivaprakasam reports directly to the Managing Director. Under this structure, the department can play the role of an outside counsel, and give judgement uncoloured by departmental loyalties. The annual budget of the department was Rs. 30 lakhs for the year 1978-79, as compared to the Rs. 3 crores spent in the overall corporate overhead.

The functions performed by this department can be broadly classified into three areas:

a Share transfers : Eleven out of the fifteen Assistants in the department do this function. Bulk of the work is documenting share transfers which is very routine task. Also, this section handles queries from shareholders which is of a non-routine nature.

b Secretarial work : This consists of the obligatory duties imposed by the Companies Act. The work involved is confidential in nature and cannot be delegated to outsiders. The three people employed in this section mostly handle duties such as arranging board meetings, recording resolutions etc.

c Legal work : The work of this section broadly relates to the legal aspects of corporate transaction. This section looks into the contracts entered into by the company and handles cases with regard to bad debts. It advises top management on the legal implications of the various amendments of different laws. Also by scrutinising contracts this department ensures that the interest of DPN are protected in every contract. Most of the work in this department is of a non-repetitive and specialised nature and is given to outside counsels.

Share Transfers

Share transfers are relatively routine work. It has been estimated that each share transfer, including preparation, verification and despatch, takes about 30 minutes. During the peak period about 8000 share transfers per month are handled. However, due to the continuous losses suffered by the company during the past few years, the number of share transfers has dwindled to about 4000 transfers a month. The company, however, staffs on the average load basis and handles extra work through overtime, rather than hire temporary labour.

The budget for this section is based on the projected volume of share transfers during the next period, It is expected that as the performance of the company is projected to improve in 1979-80, the volume of share transfers will also increase, say about 15% for the year 1979-80 as compared to 1978-79. Also, a better performance will elicit lesser number of queries from shareholders who are now not so anxious about their investment in the company. Considering the above factors, it is planned to hire additional manpower to cope with the expected increase in work. It has to be done in advance as it takes about six months before a person becomes proficient in his work relating to share transfers.

Secretarial Work

The volume of work done by this section is related to the provisions in the Companies Act spelling out the duties of a company secretary. The work done is fairly repetitive over the years but is highly confidential in nature. Also strict adherence to the letter of the law is needed. As such, all the work is done by the section itself without any aid from outside agencies.

The volume of work here is fairly stable over the years and the budget is prepared taking into consideration last year's figures and any projected increase in costs. Firm adherence to the provisions of Companies Act is the major concern of this section rather than controlling costs of such adherence.

Legal Department

The work done by this department consists of scrutiny of contracts entered into by DRN to ensure that the interest of DRN

Case (1980) prepared by Mr. B. Ramamurthy, Research Associate, under the guidance of Professor V. Govindarajan.
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are fully protected. Also it advises top management of the legal implications of any changes in the law of the land. It also looks after problems relating to customs and excise duties.

The bulk of the work is given to outside counsels. This is so because each contract is unique in itself and it will be very expensive and difficult to develop the legal expertise within the company itself. Also, it might lead to under-utilisation of the capacities of some legal specialists employed by the company. DRN selects the outside counsel and mostly pay their fees. DRN's own counsel, however, actively participates in the preparation of all the contracts. He frequently prepares the first draft or in lieu reviews the draft prepared by the outside counsel. He thus acquires a broad based knowledge of the legal problems in the company and also ensures consistent application of the company's policies. The major objective is to turn out 'defect free' contracts, as even a small defect can cost a large amount of money to the company.

Budgeting & Control

The output of the secretarial and legal department is controlled through a budget. Early September every year, the budget committee, headed by Mr. Gopal, sends out a memorandum to every department to submit their budgets for the following year. The budget for the legal and secretarial department is the aggregate of the budgets of the three sections detailed above. The department head is answerable for large overruns, though a leeway of 5% over budget is automatically given. The management recognised that as work done by this department was largely qualitative, not much significance is attached to the budgeted costs and overruns.

Due to the high cost of training and the specialised nature of work, extreme care was taken in selecting a person for the department. Mr. Sivaprakasam also kept himself informed about the working of the department by occasionally going through the output of an assistant. The aim of the department was to produce 'no-defect' contracts and to expedite share transfers. It may be mentioned here that it is possible to get the share transfers done by the company registrars' office at 50% of the current costs, but in the interest of customer satisfaction, the company is willing to spend the extra 50%.

Budget Reports

Mr. Gopal was thoroughly familiar with the above background information as he contemplated the budget reports given by the secretarial and legal department for January 1979. The budget summary for each of the three sections are given in Exhibit 2. Mr. Gopal was wondering what questions he should ask Mr. Sivaprakasam and how should he use the information available to correctly assess the performance of the department.

Questions

1 How well do budgets help as a tool of cost control in the secretarial and legal department of DRN?

2 If you believe that budgets are not an effective tool of control what other method of control, would you recommend?

EXHIBIT 1

Partial Organisational Chart of DRN

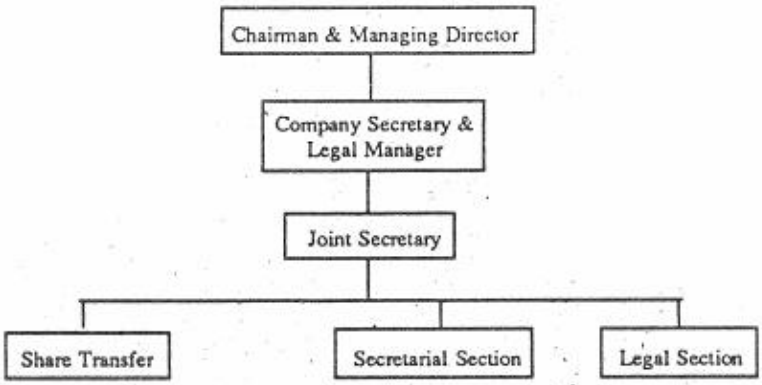


EXHIBIT 2

BUDGET REPORT FOR JANUARY 1979

	Budget	Actual	Variance
Share Transfer			
Salaries, fulltime	117,850	107,850	10,000
Salaries, overtime	10,000	14,700	(4,700)
Allocated rent	2,500	2,500	-
Equipment depreciation	600	600	-
Office supplies	1,450	1,700	(250)
Electricity	1,325	1,250	75
Telephone	250	275	(25)
Postage	8,400	7,479	921
Travel	450	200	250
Printed forms etc.	600	872	(272)
Miscellaneous	250	284	(34)
Secretarial Department			
Salaries	29,700	33,700	(4,000)
Salaries, overtime	-	2,000	(2,000)
Allocated rent	2,000	2,000	-
Furniture depreciation	650	650	-
Office supplies	1,200	1,144	56
Electricity	650	575	75
Travel	1,500	2,450	(950)
Miscellaneous	600	950	(350)
Legal Department			
Salaries	2,500	2,500	-
Fees to outside counsel	67,500	108,400	(40,900)
Miscellaneous	600	350	250
	240,575	292,429	(51,854)

CASE 2

BENGAL STEEL LIMITED

"Since our organisation and business activities are growing at a rapid pace, we are now thinking of delegating more and more responsibilities to our managers. However, we believe that successful delegation will largely depend on the effectiveness of the company's control system. In our company, we have already set up a flexible budgetary and standard costing system to control the costs of our products. We also measure the profit performance of our operating departments every month. The profit that we determine is based on the standard rates for materials, wages and service charges. Annually, we estimate overheads and interest expenses and allocate them to each department after taking into consideration factors like capital employed, number of employees, conversion costs (total cost of production minus material cost), and direct wages. We estimate depreciation charges by the writtendown value method at a composite rate on replacement cost of the assets. One-twelfth of the annual charges estimated for overheads. Interest and depreciation is charged every month in the mostely profit and loss account. The sales value for the month is estimated at standard selling rates and /or at transfer prices fixed annually for internal transfers.

"However, some executives have expressed their reservations about the profit performance measurement made by the company. Their objections relate to the way in which transfer prices are fixed and overheads allocated. We have discussed these points from time to time in the Department Head's meetings.

"We would appreciate it very much if you could suggest a method of measuring profit performance of our operating departments."

This was how Mr Gupta, Controller of Accounts of Bengal Steel Limited, expressed the problem to Professor Vaidya, a member of the faculty of Indian Institute of Management, Ahmedabad, who had called on him in the morning of May15, 1965, for obtaining information on the company's management practices. Mr Gupta had arranged for briefings by other executives in the morning hours in order to acquaint the visitor with the company's situational factors. He appraised Professor Vaidya of the senior executives' meeting, which had been scheduled for the afternoon, at which he could observe the reactions to the performance measurement system.

Company Background

Bengal Steel Limited (BSL), located in Eastern India, was a large manufacturer of quality castings, ingots and rolled products such as squares, octagonals, rounds and wire rods. The company's sales volume had steadily been increasing during the past ten years: sales in 1964-65 were about Rs 9 crore. BSL had about 2,500 employees on its roll as of April 1, 1965. The organisation structure of BSL is set out in Exhibit 1.

For control purposes, the company had established a number of cost centres for collecting cost information (see Exhibit 2). It also measured profit performance of the following three main operating departments:

1 Electric Furnace

2 Steel Foundry

3 Rolling Mills

Electric Furnace

In the Electric Furnace Department, melting operations and ingot-making were carried out. The company purchased steel scrap in bulk and melted it in the electric furnaces for making molten steel. For this purpose, BSL also used internally generated scrap, such as runners and risers, and defective castings arising from foundry and ingot operations. Molten steel was either transferred to the steel foundry for making castings or used in the Electric Furnace Department itself for casting ingots. Ingots were sold in the market, or used in place of billets in manufacturing operations relating to rolled products.*

* The quality of rolled products made of billets was considered better than whose made of ingots. Moreover, billets, if procured at controlled prices, were cheaper than ingots. However, because of scarcity conditions and irregular supply of billets, rerollers had to use ingots. The prices of ingots fluctuated very sharply, depending on the demand and supply position.

Case (1967, revised 1972) prepared by Professors S.K. Bhattacharya and K.L. Varshneya.
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Case material is prepared to serve as a basis for class discussion. Cases are not designed to present illustrations of either correct or incorrect handling of administrative problems.

In the process of melting, some waste material (known as skull) was turned out. Skulls were sold to scrap dealers and fetched a price equivalent to 35 to 45% of prevalent scrap prices.

Steel Foundry

In the Steel Foundry, molten metal was turned into castings of various sizes and designs. The operations included (a) mould and core making, (b) pouring of metal into the moulds, (c) taking out castings from mould boxes by removing the sand when it had become cold, (d) cleaning and fettling work (i.e., gas cutting, annealing, shot blasting and finish fettling) before machining, (e) machining, and (f) final finishing and painting.

Most of the company's castings were sold to railways, automobile manufacturers and other manufacturers against orders booked in advance. The company usually booked orders for castings at an estimated full cost plus profit margin, calculated as a percentage of the full cost (see Exhibit 3). The profit percentage varied according to the complexities of castings and market conditions.

Scrap, such as runners and risers, and defective castings, inherent in foundry operations, were transferred to the Electric Furnace Department. For such transfers, credit was given to the Foundry at a standard scrap rate. The same rate was also charged for all steel scrap issued to the Electric Furnace Department. This rate was approximately equal to the purchase price of scrap from the market over the period of time.

Rolling Mills

After heating, billets and ingots were rolled into rounds, rods, flats and squares. The company generally used billets for making rolled products for selling in the market. Defective rods and bars and cut-pieces were also sold in the market at a price lower than that charged for good pieces.

A flow chart is given in Exhibit 4. A typical statement showing input/outputs of the Electric Furnace, Steel Foundry and Rolling Mill departments for the month of April 1965 is set out in Exhibit 5.

Monthly Department Profit and Loss Account

The company's accounts department prepared a monthly columnar profit and loss account for each of the three departments. A typical profit and loss account for the month of April 1965 is set out in Exhibit 6. The account showed production in tonnes during the month; sales value of such production; its budgeted cost; gross budgeted margin; favourable and unfavourable variances; gross actual margin; overheads, interest; depreciation on replacement basis; profit before tax; and managing agents' commission. The profit after charging depreciation on replacement cost but before tax and managing agents' commission was related to investment base (amortised cost of the fixed assets of the department, the standard working capital, and allocated share of the investment in the service and staff departments) to find out the rate of return. This rate of return usually formed a base for judging the performance of the department. The accounts department also worked out the profit before tax on the basis of depreciation of the assets at actual cost and after providing for managing agents' commission.

Sale Value of the Production

For the purpose of preparation of the monthly profit and loss accounts, the total production of the month was assumed as sold in the same month. Molten metal transferred to the Foundry was valued at budgeted cost plus a "reasonable" rate of return on investment.

Similarly, the sale value of the production of ingots was assigned at a standard rate which was equivalent to the budgeted cost of ingots plus a "reasonable" return on investment. However, actual realisation on sale of ingots in the market was higher by 10 to 25%, depending on current market conditions. The difference between the actual realisation and the amount calculated at standard price was credited to what was called a "price adjustment account".

Credit for skull was granted at an estimated ex-works realisation (on sale of such material) for the year.

The sale value of the production of castings in a particular month was determined on the basis of rates at which orders for the castings produced were booked. Any castings not produced against a specific order, but meant for stock and sale, were valued at the company's selling prices. The sale value of castings produced was further split up for various processes on the basis of estimates prepared at the time of booking the orders. A typical estimate made at the time of booking the order for castings is set out in Exhibit 3. Such a breakdown enabled the company to determine the gross margin of profit on the various processes in the Foundry.

For working out the monthly profit and loss account of rolled products, the value added, i.e., sale value minus cost of

raw materials, was taken as revenue. The cost of raw materials was also excluded from the budgeted cost of production. Sale value of rolled products was estimated at the company's selling prices which covered standard cost of production plus a certain percentage as profit margin.

Budgeted Cost of Production

The company prepared flexible budgets annually for its operations and budgeted the cost of production. In such cost determination, overheads, interest, depreciation, managing agents' commission and direct taxes payable by the company on its income were not included. This budgeted cost of production was adjusted for variation in the level of actual production during the month for the purpose of monthly profit and loss account to arrive at the gross budgeted margin.

Favourable and Unfavourable Variances

The accounts department compiled departmental expenses called "production costs" every month and compared them with the budgeted expenses for the actual level of activity in the month. In arriving at the actual departmental expenses during the month, the same standard price of materials, wages and service charges were applied as had been used for the purposes of budgeted cost of production. If the actual expense amount so estimated was higher than the budgeted expense figure, the difference was called "unfavourable variance". If it was lower than the budgeted figure, the difference was termed "favourable variance". In the monthly profit and loss account, the gross actual margin was worked out after adjusting favourable and unfavourable variances in the gross budgeted margin.

Overheads, Interest and Depreciation

Annually, the accounts department also estimated overheads, interest and depreciation charges for the year, and the amounts so estimated were divided by twelve to arrive at the monthly charges. Depreciation was estimated by the written-down value method at a composite rate on replacement cost. The amount thus arrived at charged to departmental monthly profit and loss accounts to arrive at the profit to be applied in determining the "rate of return" on investment.

The Department Heads' Meeting

In the afternoon of May 15, 1965, the senior executives of Bengal Steel Limited held a meeting in which the profit performance of the three departments during the month of April 1965 was discussed. Professor Vaidya was introduced to the gathering as a person with considerable insight into the management planning and control function, interested in observing real-life management problems for the benefit of students of business administration.

Initiating the discussion, the General Manager expressed his concern about the loss arising out of the operations of the Electric Furnace Department. He said, "In the past two years, the company has made a substantial investment in installing the electric furnaces. When the decision to install electric furnaces was taken, it was estimated that the investment in the electric furnaces would yield a very attractive return. We find that in reality the Electric Furnace Department is operating at a loss!"

The manager of the Electric Furnace Department was surprised at the views expressed by the General Manager. He commented:

"We first set up an arbitrary method of measuring profit performance of the departments and then find a scapegoat. I wish we were discussing the performance of the maintenance department. How can you operate properly if one of the three electric furnaces is constantly out of commission due to breakdown!

"However, let's look at our accounting procedure. Anybody would agree that setting transfer prices of molten metal on the basis of standard cost plus the so-called reasonable return on investment is arbitrary and inequitable. We are selling castings at a price equivalent to estimated cost plus an average profit margin of 15%. Why not apply the same principle in determining the transfer price of molten metal? Clearly, we are winking at ourselves and adopting double standards. By transferring molten metal at standard cost plus a "fair return" on investment, the profits of the Electric Furnace Department are pulled down, so that the gravy can be distributed to the Foundry Department."

Explaining his point further, he mentioned that the Electric Furnace Department had not been able to earn the standard profit in the month of April 1965 (see Exhibit 5) in spite of its production being more than the target fixed for the month. This was because of the unfavourable variances which arose due to frequent breakdowns in one of the furnaces. The frequent breakdowns increased overtime payment, consumption of electricity, electrodes, and maintenance materials. Production from the affected furnace was 111 tonnes less than what had been budgeted. This shortfall was, however, made good by stepping up production on the other two furnaces. The actual production of molten metal in all three electric

furnaces was 2,028 tonnes against the budgeted production of 2,000 tonnes. The department had still not been able to earn standard profit. The blame for frequent breakdowns resulting in the poor profit performance could not be laid at the door of the operating department. He, therefore, strongly advocated the revision of transfer price of molten metal on the basis adopted for determining sales price of castings to customers (see Exhibit 3). Alternatively, he suggested that it should be geared to the final selling price of castings by making appropriate allowances to cover the cost and a reasonable return on investment for the intervening processing departments.

The foundry manager said that he could not possibly accept the views expressed by the manager of the Electric Furnace Department. "Metal-melting is only one of the many operations we go through to make final castings. Under the circumstances, the price based on standard cost plus reasonable return on investment should provide a fair basis for appraising performances and for control purposes. From the management point of view, the standard profit is of little significance. What matters is whether performance standards have been achieved."

The Rolling Mills Superintendent supported the views expressed by the manager of the Electric Furnace Department. He, however, favoured linking the transfer price of molten metal to the selling price of ingots. He pointed out that the operations involved in making ingots from molten metal were relatively simple, and, therefore, transfer price of molten metal should be set on the basis of selling price of ingots after deducting standard cost of additional operations. He mentioned that such a price would be very close to the concept of "values added" which, he understood, was adopted extensively in other countries.

The Controller of Accounts, however, saw practical difficulties in implementing the suggestion due to frequent price changes in ingots. Ingot prices fluctuated very sharply, depending on the demand and supply position. If the market price of ingots was taken as a base for deriving the transfer price of molten metal, the cost of final castings would vary significantly from month to month.

Another question which came up during the discussion related to the determination and allocation of overheads, interest and depreciation. The foundry manager complained that his operation was heavily overburdened with the allocated charge of overheads and interest. He suggested that only those costs which were directly identifiable with the individual operating departments be considered for measuring the profit performance of the department.

The Rolling Mills Superintendent questioned the reasonableness of the present method of determination of investment base. He argued that investment in the service and staff departments should not be allocated to the operating departments. He felt that since operating departments did not have any control over investment in service and staff departments, they should be excluded from the investment base.

The Secretary of BSL suggested a further improvement in evaluating departmental performance. He mentioned that currently the net book cost of fixed assets plus standard working capital and allocated share of investment in service and staff departments was being taken as "investment" for finding out the "rate of return". He felt that historical costs introduced great anomalies in profit performance appraisal as it operated against departments with relatively modern plant and equipment. He suggested that ROI based on replacement value of assets would be more equitable and appropriate.

The General Manager, after listening to the views expressed by the various executives, could see that the present method was generating a lot of resentment; but he was not clear as to the proper way of evaluating departmental profit performance. He also doubted whether, in his organisation, monthly reporting of profit performance served any useful purpose. He was almost certain, however, that after the meeting Professor Vaidya would ask him as to how he would resolve the issues raised by his executives.

Questions

1 Evaluate the Bengal Steel performance appraisal system.

2 What are the reasons which led to non-acceptance of the system by the managers concerned? How valid are these criticisms? What changes would you suggest in the system, keeping in view the operational characteristics of Bengal Steel Limited?

EXHIBIT 1

Bengal Steel Limited

(ORGANIZATION CHART AS OF 1964/65)

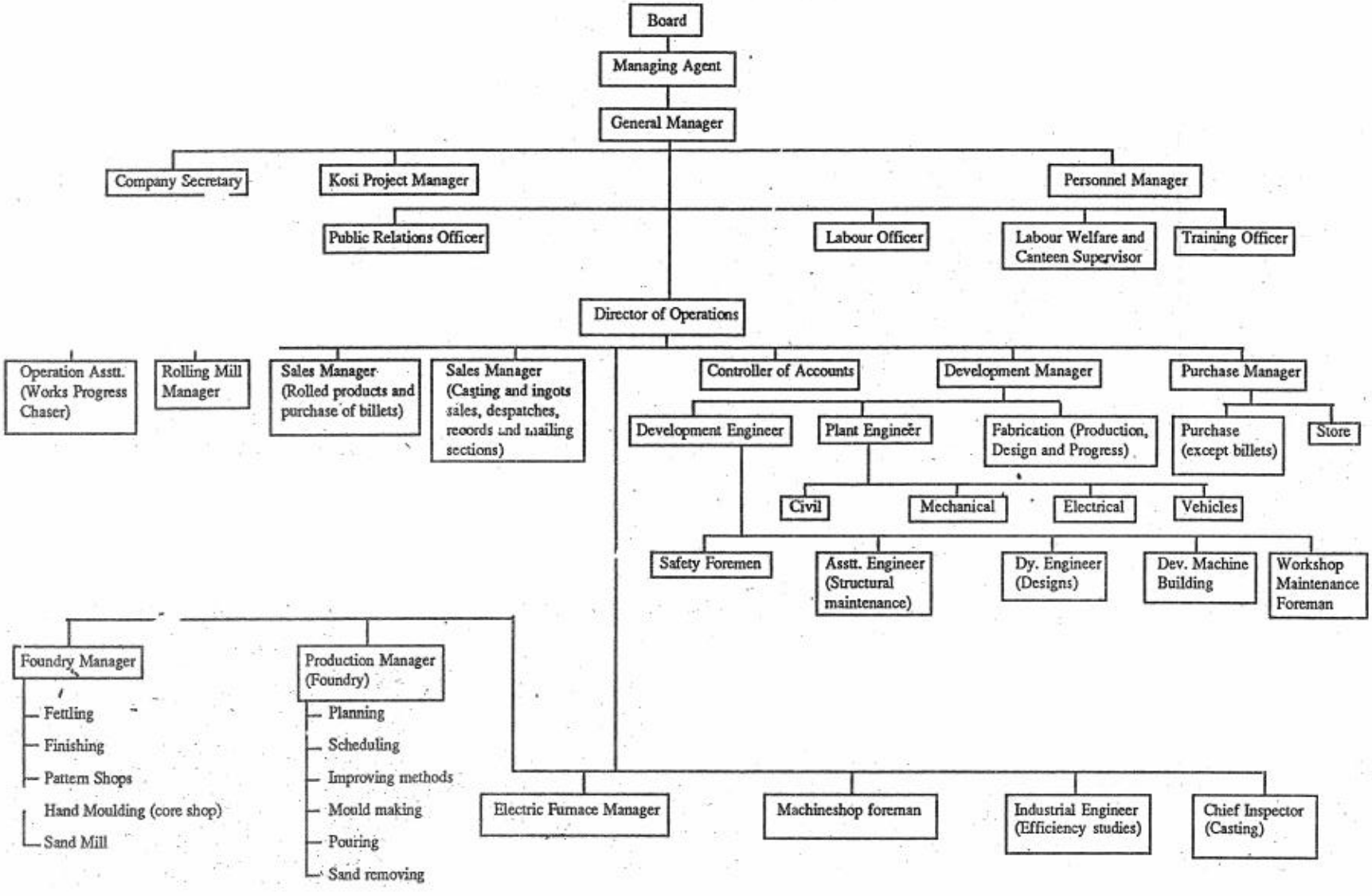


EXHIBIT 2

Bengal Steel Limited

(EXPENSE AND PROFIT CENTRES)

Cost centres		Profit centres
PRODUCTION	Electric Steel Furnace	*Electric Furnace Department*
	Ingot Making	
	Scrap	
	Steel Foundry	*Steel Foundry*
	Fettling	
	Machine Shop	
	Finishing	
	Inspection	
	Casting Despatch	
	Rolling Mill	*Rolling Mills*
	Rolling Mill Despatch	
	Bright Bar	
SERVICES	Structural Shop	
	Pattern Shop	
	Workshop Maintenance and Development	
	Smithy Shop	
	Maintenance	
	Civil Engineering	
	Laboratory	
	Research and Technology	
	Vehicle	
FACTORY ADMINISTRATION	Stores	
	Canteen	
	Gardening	
	Labour Welfare	
	Personnel	
OFFICE ADMINISTRATION	Personnel	
	Industrial Engineering	
	Production Planning	
	Development	
	Purchase	
	Sales	
	Accounts	
	Public Relations	
	Graduate Trainees	
	Offices of General Manage-	
	Secretarial Office	

EXHIBIT 3

Bengal Steel Limited

TYPICAL COST ESTIMATE

			Cost per Casting Rs. Ps.
1	Pattern	0.39	
2	Metal	39.07	
3	Moulding	5.69	
4	Special material	20.00	
5	Core making	6.74	
6	Knockout, moulding and core shop	10.26	
7	Fettling	8.68	
8	Fettling overhead and inspection	3.45	
9	Cost of Black Casting		94.28
10	Machining		50.00
11	Finishing		3.87
		Total Cost	148.15

Total Cost	148.15
Rejection 10%	14.82
Total	162.97
Overheads 60%	97.78
Total	260.75
Profit 15%	39.11
Suggested price of black casting	299.85
Say	300
Order booked	280

EXHIBIT 4

Bengal Steel Limited

FLOW CHART

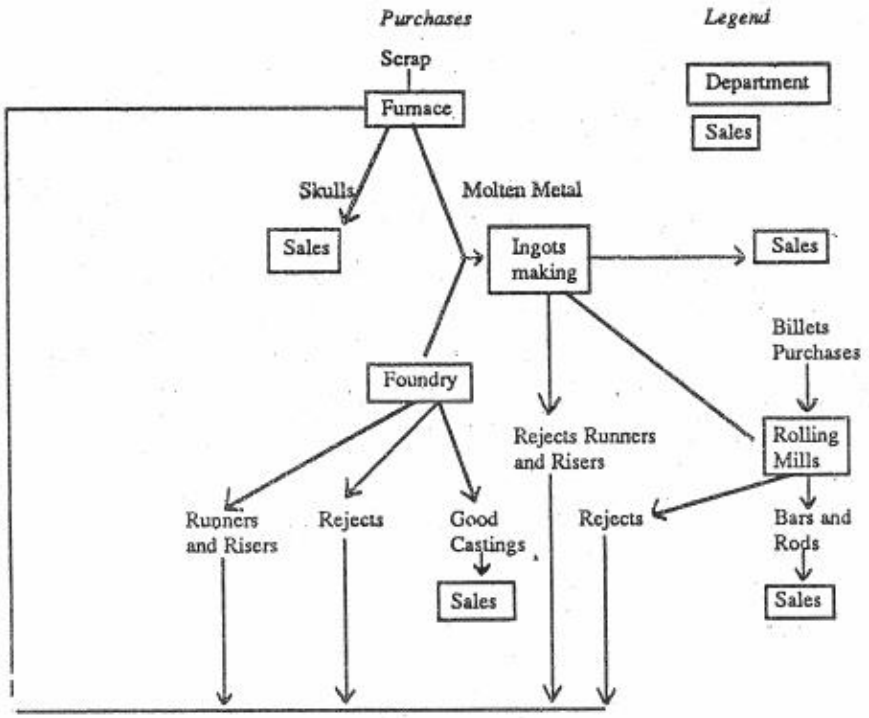


EXHIBIT 5

Bengal Steel Limited

Input-Output Statement (in Tonnes)
(April 1965)

(Tonnes)

	Molten		Metal Castings		Ingot-making		Rolled Products	
	Input	Output	Input	Output	Input	Output	Input	Output
Scrap								
Purchased	1,869	-	-	-	-	-	-	-
Own-Runners & Risers	240	-	-	636	-	10	-	-
— Castings	6	-	-	72	-	-	5,000	-
Billets : Purchased	-	-	-	-	-	-	5,000	-
Molten Metal : Foundry	-	1,646	1,646	-	-	-	-	-
Ingots	-	278	-	-	278	-	-	-
Skull	-	104	-	-	-	-	-	-
Castings - good	-	-	-	781	-	-	-	-
Ingots	-	-	-	-	-	268	-	-
Bars & Rods	-	-	-	-	-	-	-	4,207
Defectives, Cuttings, etc.	-	-	-	-	-	-	-	624
Unrecoverable loss	-	87	-	157	-	-	-	169
Total	2,115	2,115	1,646	1,646	278	278	5,000	5,000
For Sales :								
Skull + Waste product		104						
Ingots						268		
Castings			781					
Bars and rods								4,207
Defective & Cuttings, etc.								624

EXHIBIT 6

Bengal Steel Limited

MONTHLY DEPARTMENTAL PROFIT/LOSS ACCOUNT — (APRIL 1965)

Sl. No.	Particulars	Unit	Electric Furnace		Steel Foundry		Rolling Mill	
			Total	Per tonne	Total	Per tonne	Total	Per tonne
1	Production	Tonnes	2,028		781		4,207	
2	Sale value of production	Rs.	8,13,786	401.28	22,28,017	2,916.80	6,30,202	149.7[illegible]
3	Budgeted cost of production	Rs.	7,22,045	356.04	14,98,072	1,918.15	2,75,992	65.6[illegible]
4	Gross budgeted margin (2–3)	Rs.	91,741	45.24	7,79,945	[illegible]98.65	3,54,210	84.1[illegible]
5	Variances - favourable	Rs.	57,189	28.20	98,384	125.97	18,349	4.36
6	- unfavourable	Rs.	(83,266)	(41.06)	(1,18,662)	(151.93)	(13.610)	(3.23)
6	Gross actual margin (4–5)	Rs.	65,664	32.38	7,59,667	972.69	3,58,949	85.32
7	Overheads	Rs.	38,000	18.74	2,59,000	331.63	1,03,000	24.48
8	Interest	Rs.	3,000	1.48	40,000	51.22	13,000	3.09
9	Depreciation (on replacement basis)	Rs.	31,000	15.28	1,69,000	216.39	59,000	14.02
10	Profit for the month	Rs.	(6,336)	(3.12)	2,91,667	373.45	1,83,949	43.73
11	Extra Depreciation for replacement	Rs.	12,500	6.16	68,000	87.07	24,000	5.70
12	Profit subject to Managing Agents' Commission & Tax	Rs.	6,164	3.04	3,59,667	460.52	2,07,949	49.43
13	Managing Agents' Commission for the month	Rs.	-	-	35,967	46.05	20,795	4.94
14	Profit for the month subject to Tax (12–13)	Rs.	6,164	3.04	3,23,700	414.47	1,87,154	44.49
15	Investment	Rs.	40,00,000		1,75,00,000		1,20,00,000	
16	Rate of return (on annual basis)			(1.9%)	20%		18.4%	

APPENDIX 1 TO EXHIBIT 6

Bengal Steel Limited

DEPARTMENT—ELECTRIC FURNACE

Expenses, Variances, and Cost per Tonne — April 1965

Sl. No.	Particulars	Expenses Amount		Variance		Cost per Tonne	
		Budget	Actual	Favourable Rs.	Unfavourable Rs.	Budget	Actual
1	Wages	23,871	26,411	—	2,540	11.77	13.02
2	Production Bonus-labour	6,759	7,445	—	686	3.33	3.67
3	Salaries	11,961	13,179	—	1,218	5.90	6.50
4	Production Bonus - staff	2,737	2,849	—	112	1.35	1.40
5	Electricity	1,01,499	1,23,039	—	21,540	50.05	60.67
6	Electrodes and nipples	22,308	35,328	—	13,020	11.00	17.42
7	Fluxes	24,557	28,599	776	4,818	12.11	14.10
8	Furnace and roof lining	20,872	25,350	—	4,478	10.29	12.50
9	Fettling materials	16,381	26,779	195	10,593	8.08	13.20
10	Stopper Bar and ladle lining	12,168	13,003	1,182	2,017	6.00	6.41
11	Sundry stores	18,849	16,468	3,049	668	9.29	8.12
12	Scrap Department	7,808	6,611	1,238	61	3.85	3.26
13	Service expenses	59,908	38,674	21,234	—	29.54	19.07
14	Maintenance Castings-repairs	6,916	19,018	—	12,102	3.41	9.38
	TOTAL OPERATING COST	3,36,594	3,82,753	27,694	73,853	165.97	188.72
A	COST OF MILD STEEL LIQUID METAL						
	Raw materials	3,27,277	3,10,428	25,299	8,450	180.32	171.03
	Operating Cost					165.97	188.72
	Total					345.29	359.75
B	COST OF MANGANESE LIQUID METAL						
	Raw materials	12,956	12,844	329	217	296.82	294.25
	Operating Costs					165.97	188.72
	Total					462.79	482.97
C	COST OF INGOTS MANUFACTURED						
	Raw Materials	27,798	27,510	458	170	164.52	162.82
	Operating cost up to liquid metal					165.97	188.72
	Additional Cost for making Ingots						
	Wages	5,900	6,069	—	169	22.02	22.65
	Production Bonus-labour	1,212	1,262	—	50	4.52	4.71
	Salaries	1,769	2,062	—	293	6.60	7.70
	Production Bonus-staff	372	436	—	64	1.39	1.63
	Ingot moulds	3,973	864	3,109	—	14.83	3.22
	Channel bricks	4,194	3,894	300	—	15.65	14.53
	Total	17,420	14,587	3,409	576	65.01	54.44
	Total cost of manufacturing ingots					395.50	405.98

APPENDIX 2 TO EXHIBIT 6

Bengal Steel Limited

(Department : Foundry)

EXPENSES, VARIANCE, AND COST PER TONNE — SUMMARY—APRIL 1965

Particulars	Expense Amount		Variance		Cost per Tonne	
	Budget	Actual	Favourable	Unfavourable	Budget	Actual
Pattern Making	31,022	31,022	—	—	39.72	39.72
Liquid Metal Cost (net)	4,95,412	5,11,941	—	16,529	634.33	635.49
Moulding	4,31,619	4,21,146	61,947	51,474	552.64	539.22
Fettling	2,97,786	3,05,385	24,422	32,021	381.29	391.03
Machining	1,46,637	1,46,786	10,494	10,643	302.34	302.65
Finishing	49,461	55,935	1,521	7,995	101.56	114.86
Royalty	46,135	46,135	—	—	—	—
Total	14,98,072	15,18,350	98,384	1,18,662	—	—

APPENDIX 3 TO EXHIBIT 6

Bengal Steel Limited
(Department: Foundry)

PROCESSWISE GROSS MARGIN PER TONNE

Process	Production Value	Expenses	Gross Margin
	(Rupees in lakhs)		
Moulding and Fettling	22.95	13.16	9.77
Machining	2.01	0.98	1.03
Outside Machining	0.63	0.49	0.14
Finishing and Assembly	0.97	0.56	0.41
Total Machined Castings	26.54	13.18	11.36

APPENDIX 4 TO EXHIBIT 6

Bengal Steel Limited
(Department : Rolling Mills)

EXPENSE, VARIANCE, AND COST PER TONNE — SUMMARY—APRIL 1965

Particulars	Expense Amount		Variance		Cost per Tonne	
	Budget	Actual	Favourable	Unfavourable	Budget	Actual
Sections and Semi-Production (Tonnes)	3,942	4,207	265			
Defective, Cutting, etc.	270	328	—	58		
Burning Loss	127	141	—	14		
Raw material consumed	4,604	4,676	—			
Man-hours per tonne	15.20	13.48	1.72	—		
EXPENSES						
Wages	58,478	59,154	2,801	3,477	13.91	14.07
Production Bonus-Labour	22,314	20,831	1,483	—	5.30	4.95
Salaries	15,586	16,035	—	449	3.70	3.81
Production Bonus-Staff	3,885	4,058	—	173	0.92	0.96
Rolling Mills Despatch	2,671	3,140	4	473	0.63	0.75
Fuel Oil	37,891	36,152	2,227	488	9.01	8.59
Mill Bearings	6,310	5,523	1,467	680	1.50	1.31
Roll Charges	11,690	11,690	—	—	2.78	2.78
Other Stores	12,106	14,379	2,013	4,286	2.88	3.42
Transport Handling	32,663	32,663	—	—	7.76	7.76
Bright Bar Section	2,393	2,393	—	—	0.57	0.57
TOTAL	2,05,987	2,06,018	9,985	10,026	48.96	48.97
Service expenses	31,805	28,383	3,422	—	7.56	6.75
Maintenance Castings	11,990	7,058	4,932	—	2.85	1.68
Electricity	26,210	29,794	—	3,584	6.23	7.07
OPERATING COST	2,75,992	2,71,253	18,349	13,610	65.60	64.47

JALABHUMI NUTRITIONAL PROGRAMME (A)

The International Relief Organization (IRO) was engaged in 1974, in planning a feeding scheme to mitigate, to the extent that resources permitted, the nutritional deficiencies of the population of Jalabhumi State. On the basis of sample surveys, the segment of the population likely to experience deficiencies in the intake of calories was identifield as members of households whose monthly expenditure was less than Rs. 300 per month.

IRO officials were aware that nutritional problems, other than just deficiencies in calorie intake, were likely to exist. However, deficiency in calorie intake was selected as a measure of the nutritional problems, in view of prior experience in other states, where it was found that much greater deficiencies in calorie intake existed as compared, to other nutritional problems such as protein deficiency. Also, in India, it was widely accepted that if calorie intake was adequate, most other essential nutrients were also consumed. Moreover, the calorie yardstick, while perhaps simplistic, was felt to be more amenable to measurement than other more sophisticated yardsticks of nutritional deficiency and also more easily understood by administrators who were not professional nutritionists. Within the segment of the population identified as likely to be mal-nourished the most vulnerable sub-sets were thought to be:

i) Infants upto 3 years,
ii) Pregnant women and nursing mothers, and
iii) Pre-school children between 3 and $5\frac{1}{2}$ years.

It was felt that each of the three sub-sets required a different operational approach.

Pre-school Children between 3 and $5\frac{1}{2}$ Years

The Jalabhumi State Government had already initiated a "Mid-day Meal Programme" in almost all the 30,000 odd primary schools in the state. The IRO officials were of the opinion that expansion of the Mid-day Meal Programme would be the swiftest and easiest way of covering children in the $3\text{-}5\frac{1}{2}$ years group. The recommendation made by a team studying the problem was that pre-schoolers "be invited to come to school at a given time and partake of the same menu as the school children." It was pointed out by the team that food preparation on problems would be minimized as it would only require that the quantities of food being cooked be increased, and the need for setting up a new logistics system, finding space and shelter, and employing necessary personnel would be eliminated.

The experience in Karnataka, where pre-school children had been included in the state's regular primary school feeding programme for several years, led IRO officials to believe that the recommendations made were practicable and likely to be successful. It was planned that, on an average, each primary school would feed about 45 pre-schoolers, thus covering the estimated 1.3 million pre-schoolers in Jalabhumi requiring supplemental nutrition.

The practice, existing in some other states, of providing supplemental nutrition to pre-schoolers through a network of balwadies (pre-schools), was not thought to be feasible in Jalabhumi. Only about 1,700 balwadies were in operation. Each of these could enroll, at the most, 40 pre-schoolers. In order to cover the 1.3 million pre-schoolers requiring supplemental nutrition, the number of balwadies would need to be increased to about 33,000 about 20 times the existing number. Expansion of this order was not thought to be practicable. Also, the logistics of supplying food to such a large number of balwadies was felt to pose nearly insurmountable difficulties. Consequently, IRO officials were certain that the only practicable approach was that of expanding the existing Mid-day Meal Programme to cover pre-schoolers.

Infants upto 3 Years, and Pregnant Women and Nursing Mothers

Reaching the other two selected sub-sets of the target population was found to pose special problems. Experience

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in other states indicated that elder relations bringing infants for their supplemental diet were generally reluctant to wait while the infants were fed. Also, social mores and attitudes were such that most adult Indian women, particularly pregnant and nursing women, reacted strongly and negatively to the idea of consuming food in the presence of strangers. Furthermore, serious problems of finding adequate space and shelter for feeding these two sub-sets were anticipated. These considerations led IRO officials to adopt the suggestion that infants upto 3 years, and pregnant and nursing women be allowed to take home their quota of food. It was realized that the food taken home would be consumed by other members of the family also, but IRO officials had, through controlled experiments, learnt that a significant improvement in the nutrition of the target population nevertheless did take place despite practice of sharing the food with other members of the family. In their judgement the drawbacks of forcing these two sub-sets to consume their food at the distribution centre outweighed the disadvantage that the target population would not derive the full benefit of the additional calories provided through the feeding programme.

IRO officials felt that the best way to reach the estimated 940,000 pregnant and nursing women and 990,000 infants would be to again utilize the existing logistics of the Mid-day Meal Programme. They proposed that food be distributed on a fortnightly basis to, on the average, 31 pregnant and nursing women, and 33 infants by each of the primary schools covered by the Mid-day Meal Programme.

Additional Operational Decisions

Most feeding programmes, in IRO's experience, provided meals containing 400 or less calories. Sample surveys had indicated, however, that about half the target population received less than 50% of the minimum 1200-1500 calories thought necessary for adequate nutrition. It was decided therefore that each IRO meal should provide at least 500 calories.

The Mid-day Meal Programme operated only on school days. IRO officials felt that meals should be provided on at least 250 days per year instead of only on the 200 working days. This would however depend on whether the state government and concerned relief organizations were capable of and willing to operate the Mid-day Meal Programme for an additional 50 days a year during the school holidays.

A decision that still remained to be taken was whether pre-cooked food prepared in central kitchens was to be served, or whether the practice followed in the Mid-day Meal Programmes of cooking food at each of the schools should be adopted.

While pre-cooked food would probably reduce the cost of the programme by about 5% to 10% there were several attendant problems such as the technology of food preparation, the impact of break-downs in central kitchens, the logistics of distributing hot perishable food to thousands of schools on time and the monotony of the same menu being provided day after day as the mass production techniques to be employed in central kitchens would not permit variations in the composition of the cooked food.

Programme Evaluation

IRO officials decided that, before launching their supplemental nutrition programme in Jalabhumi, a framework for evaluating the programme should be developed. IRO officials were aware that supplemental feeding programmes in India had "not been evaluated in the past in terms of attempting to determine results or impact."

Programme evaluation had, in the past, been restricted to accounting for the delivery of food and for the expenses incurred. In other words, programme evaluation had focused only on accounting for inputs. In addition, the lack of specific, articulated goals had made it impossible in the past to design and implement rigorous evaluation procedure. Not surprisingly, as a consequence, most evaluation of feeding programmes had centered round only the measurement of quantities of food delivered.

IRO, therefore, set up a special study team to develop a more rigorous and systematic evaluation procedure which would cover the entire programme, from specification of goals to the measurement of performance. As the first step in this direction the study team attempted to develop what they called a "goal statement" for feeding programmes in general. This "goal statement" is given in Exhibit 1. The study team planned to discuss this "goal statement" with senior IRO officials concerned with the Jalabhumi Nutritional Programme and obtain their approval before proceeding to develop a framework of evaluation for the programme.

Questions

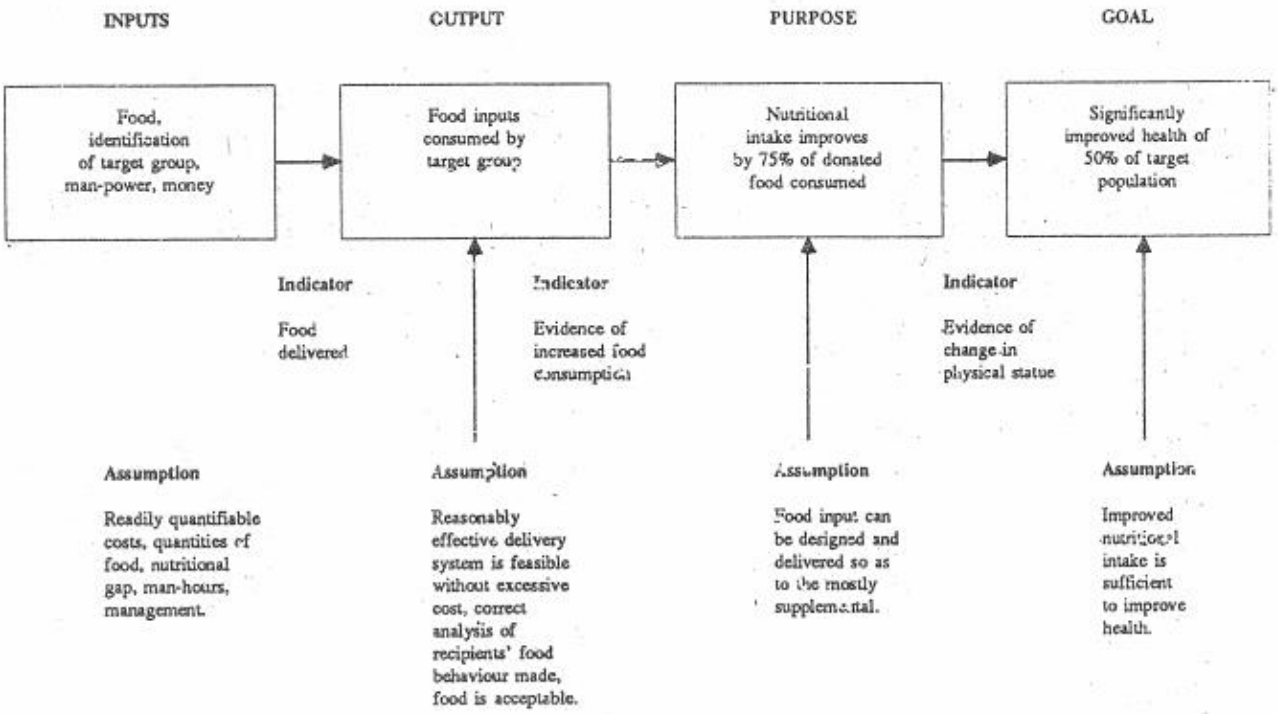
1 What additional data would you, as the IRO official concerned with the programme, have requested at the planning stage?

2 Would you accept the "illustrative goal statement" diagrammed in Exhibit 1. What modifications, if any, would you suggest so as to facilitate the development of a framework of evaluation?

3 On the basis of the "goal statement" given in Exhibit 1, modified as desired by you. Identify the data requirements needed in order to comprehensively evaluate the Jalabhumi Nutritional Programme.

EXHIBIT 1
Jalabhumi Nutritional Programme (A)

AN ILLUSTRATIVE GOAL STATEMENT FOR FEEDING PROGRAMME



THANA DISTRICT CO-OPERATIVE FISHERIES PROJECT (B)

In early December 1972, Mr. S. L. Divekar, General Manager of the Thana District Co-operative Fisheries Project, Satpati, was considering what additional control information should be collected and what control practices be adopted so that the venture be successful and conform to plans. He was concerned about the increasing outstanding balances in the current accounts for supplies and requisites to fishing boats. On November 30, 1972 there was a debit balance of Rs.1,01,202.67 in the current accounts of all the 40 boats provided by the project. The outstanding amount payable by some groups operating the boats was continuously increasing. For example, the outstanding amount payable by the group operating the Anuradha boat had increased to Rs. 9,206.72 by November 1972. Similarly, the outstanding amount payable by the group operating the Kalpana boat had increased to Rs. 8,911.36 on that date. A full recovery of the instalments for the repayment of the boat loan had not been made from some of these boats. For example, only Rs. 4,038.36 and Rs. 1,941.20 were recovered from the Anuradha and Kalpana boats as against Rs. 8,625.68, though a full year had elapsed since these boats went into operation. (See Exhibits I to IV for current, temporary loan and boat loan accounts of the boats Anuradha, Kalpana, Divyatara, and Pavan Nauka. Anuradha and Kalpana were not doing well, whereas Pavan Nauka and Divyatara showed best performance among the project boats during the fishing season 1971-72.)

Background

The Thana district had a coastline of about 110 km. and its coastal waters were endowed with the most important commercial sea fish—pomfret.[1] It had 45 fishing villages with a fishermen's population of 41,000 out of which 8,000 were active fishermen. The district had 38 primary fishermen's co-operative societies with a total membership of about 19,000. All these societies were affiliated to the Thana Zilla Machhimar Madhyawarti Sahakari Sangh Limited, Palghar (TZMS)—a federation of fisheries co-operatives at the district level. The principal activities of TZMS were marketing of fresh fish and supply of fishery requisites to the primary societies. It also operated two ice plants with a daily capacity of 29 tonnes, and a cold storage with a daily capacity of about 100 tonnes at Palghar.

Though pomfret constituted the most important commercial fisheries of the Thana district, they were being exploited largely by the operation of bag nets (locally known as dol nets) till the mid-60s. Later on, fishermen of the Thana district, particularly from Satpati, first started using nylon twine for the gill nets. These nets were tried in deeper waters for pomfret fishing. The early experiments met with very good success and a number of boats started using nylon gill netting for pomfret fishing. Since then their use had been increasing.

Exhibit V details the annual sea fish production in various districts of Maharashtra during the period 1960-61 to 1970-71. Exhibit VI gives information on fishermen population and types of boats and nets used in Maharashtra and the Thana district.

Although the use of nylon gill nets for pomfret fishing had proved to be more profitable, it required initial capital investment to have the fishing vessel equipped with the necessary fishing gear and this was beyond the reach of the economically weaker sections of fishermen. In view of the above, the Directorate of Fisheries prepared a project to develop fisheries, especially pomfret fishing and to provide better livelihood to economically weaker fishermen located in the Thana district, specially in the compact areas of Gatpati, Murbe, Kharekuram, Dhakti Dahanu, Gungawada, Bassien, Arnala, etc. After discussion among the representatives of the Agriculture and Co-operation Department, TZMS, Agricultural Refinance Corporation, and Directorate of Fisheries, the project was finally sanctioned by the Maharashtra state government on December 29, 1970. The sanctioned project involved the following activities and capital investment.

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[1] Although pomfret fisheries constituted only 3.7% of Maharashtra's total production by tonnage, their percentage in turnover by value was about 32% of the state's fish production.

1	Operation of 40 mechanized fishing boats at a capi cost of Rs.1.20 lakhs each (Exhibit VII)	Rs. 48,00,000
2	Operation of three fish carrier vessels (for carrying fish to markets, essentially at Bombay) at a capital cost of Rs.2.40 lakhs each	7,20,000
3	Establishment of three small service stations (to repair engines) at a capital cost of Rs. 8,000 each	24,000
		Rs. 55,44,000

The capital investment of Rs. 55.44 lakhs was to be financed as under:

1 Rs. 41,52,460 as a loan at an interest rate of $8\frac{1}{2}$% per annum, repayable in 10 instalments, by the Agricultural Refinance Corporation through the Maharashtra State Co-operative Bank and the Thana Zilla Central Co-operative Bank.

2 Rs. 13,48,000 as special redeemable share capital from the state government which would ultimately be treated as subsidy.

3 Rs. 43,540 to be provided by TZMS.

The working capital requirements involved in the project were to be met by TZMS. However, TZMS could draw funds for the working capital from the District Central Co-operative Bank by way of cash credit arrangement at an interest rate of $6\frac{1}{4}$% per annum.

Economics of the Project

The operation of fishing boats was expected to provide an annual profit of Rs.24,591 (to a group of 10 persons operating a boat) besides covering the food expenses of all members while on a fishing trip and their estimated wages for the nine-month fishing season. (See Exhibit VIII). TZMS, which was responsible for operating the scheme, was expected to earn Rs.6,22,581 annually from different schemes under the project as detailed below:

		Total gross receipt	Total expenditure	Profit/ Loss
1	Commission on fresh fish marketing of catches by the boats	2,87,500	1,45,480	1,42,020
2	Freezing of pomfrets to be purchased from the catches of the boats	17,50,000	16,90,719	59,281
3	Operation of carrier vessels	9,03,690	3,96,000	5,07,690
4	Establishment of service stations	48,362	35,652	12,710
5	Administrative staff	—	99,120	(99,120)
	Total	29,89,552	23,66,971	6,22,581

TZMS was responsible for supervising the construction and equipment of boats and the running of carrier vessels and service stations. These boats were to be allotted to a group of fishermen through the agency of primary societies. The group to which the boat was allotted was to operate the boat, catch fish, and hand it over for packing, transporting, and marketing to the project working under TZMS. TZMS along with the primary societies was responsible for the repayment of loan provided for the construction and equipment of the vessels.

Under the plan, 20 boats should have been constructed in the first year of the project and 20 in the second year. However, there were delays in the construction of boats due to the non availability of engines and some parts in time. It was only in October/November 1971 that 13 boats went into operation. In November 1972, all the 40 boats had gone into operation.

The plan for installing three service stations was revised and it was decided to have only one service station. They were thinking to taking over the existing government (Fisheries Department) service station, for which negotiations were going on. The scheme on carrier vessels was dropped due to operational difficulties.

Allotment of Boats, their Cost, and the Repayment of Instalment

Each boat was allotted to a group of fishermen, who were members of the primary co-operative societies affiliated to TZMS, under a higher purchase agreement detailing ownership, responsibility of boat operations delivery of catch to the project, repayment of loan, etc. (Exhibit IX). The estimated cost of each boat was Rs.1.20 lakhs. It was to be financed from TZMS' funds (Rs.910), a special subsidy by the state government (Rs.29,500), and a bank loan (Rs.89,590). However, the actual cost was somewhat lower. Therefore, the actual bank loan for each boat was Rs.86,256.83 which meant a liability on TZMS of paying an annual instalment of Rs.8625.68 towards loan repayment plus an interest on the outstanding amount for the next ten years. TZMS, in turn, was to recover the amount from the groups of fishermen through the sale proceeds of their catches to repay the bank loan. Besides the bank loan, TZMS was also to recover 1) credit granted for each fish trip; 2) temporary loan for repair and replace accessories and fishing gears, and 3) Rs.910 contributed by TZMS before the title to the boat was passed on to the group.

Management and Administration

The project was to work under the policy direction and control of the TZMS board and its executive committee.[1] Besides, Mr. Divekar, an official in the Fisheries Directorate, was deputed as General Manager responsible for the administration of the project. Mr. Divekar was assisted by a staff of 23 persons (an accountant, a cashier, seven clerks, three supervisors, 10 packers, and a peon) to discharge his responsibilities. His functions were supervising catches brought at the landing point by the boat, taking quality fish, packing and despatching them to TZMS' sales office at Bombay for sale, receiving accounts of sales from the Bombay office and keeping an individual account for each boat, arranging for supplies (both required for each trip as well as for repair and maintenance) and cash for each boat going on a trip, recovering such credits for supplies, requisites, and instalment of the boat loan, and settling the accounts of the groups.

Operation of Boats, Procedures followed for Handling Catches, their Sales, Supplies and Requisites, and Settlement of Accounts

Each boat was allotted to a group of seven who were responsible for operating and maintaining it, delivering all catches, and repaying the loan for the boats, requisites, supplies, etc. The group usually employed three contract labourers (on an average) and paid them monthly wages of Rs.75 to Rs.100 besides their food expenses while on trips. Thus, a crew of 10 persons operated the boat for fishing. Most of the fishermen who were allotted these boats had experience in fishing; they had served on wage basis as labourers on other boats. Moreover, the Department of Fisheries arranged to give fisheries training, under stipend scheme, to at least one person from the group in each boat.

Before starting on a trip, the group drew supplies of diesel, mobile oil, and ice in kind and cash for food expenses and miscellaneous supplies from the project. Usually, these amounted to Rs.450 to Rs.500 for a trip of 4/5 days. For keeping a control over these expenses, the general manager of the project in consultation with the TZMS board had set a limit of Rs.750 per trip of 40% value of the previous catch whichever may be the maximum. Usually the cost of diesel, mobile oil, and ice alone, for a trip of 4/5 days, amounted to Rs. 350.

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[1] The management and control of TZMS was vested in a board of 14 directors of whom nine were representatives of primary societies, two of individual members, one nominee each from the district co-operative bank, state co-operative department, and department of fisheries. Its bylaws were recently changed to provide one more director representing the groups of the boat. The chairman of the board, the manager of TZMS, two directors of the societies, and one director of individuals formed the executive committee. Recently, TZMS took a decision to enlarge the executive committee to seven members — chairman and vice-chairman of the board, manager, one representative each from the societies, individuals, bank and government.

Most of these fishermen knew through experience areas rich in fish. They developed their own indicators for discovering where they could get good fish catches. The Department of Fisheries had also got the coastal areas surveyed for a variety of prawn fish (see Exhibit X for survey results) in the mid-60s. The Superintendent of Fisheries was to provide information for the development of fisheries and arrange meetings to discuss such matters. However, fishermen rarely consulted the fisheries office on such issues and made fishing trips on their own judgement. They usually remained on sea waters for four days and thereafter returned to a landing place for delivering the catch to the project.

The supervisors of the project kept vigilance on the harbour. Since the coastline was spread over more than a hundred kilometres it was impossible to keep a check everywhere. The boat could come to the harbour only on high tides and, therefore, the supervisors remained present at the place during such times. However, as they resided close to the harbour, they could be contacted at any time. As soon as a boat returned to the harbour with the catch, the headman of the group informed the person on duty or the project office and arranged for delivery of quality fish to the project.

All fish brought in the boat were sorted out in two lots—quality fish to be sold fresh in the Bombay market through the project and non-quality fish to be disposed off in the local market and/or to be dried and then sold by the group. Quality fish were further sorted out into saraga (white and silver pomfret of medium size) and other miscellaneous fish. Miscellaneous fish mostly consisted of Yam, Shingara, Ghol, Dara, Halva, Tamb, and Komda. The project kept separate production and sale accounts for saraga and the miscellaneous fish. Varieties of non-quality fish such as, cat, fish, **shark**, and dhoma were sold in the local market in case of demand, otherwise they were dried and sold by the groups. Proceeds from the sale of non-quality fish (sold in the local market) and dried fish were kept by the fishermes themselves. According to them, such fish did not have any significant value. However, the project **officiels** started making an approximate estimate of the quantity of non-quality fish that was left with the group of fishermen.

Quality fish handed over to the project were packed in crates and transported through trucks to the TZMS sales office at Bombay. Bombay was located at about 90 kms. from Satpati.

The fish auction market at Bombay had 46 commission agents and three co-operatives which sold fish in wholesale through auction. One commission agent handled roughly 18 to 20 per cent and three co-operatives together handled another 20 to 25 per cent of the sale; the balance was divided among the remaining 45 agents. About 700 to 800 fisherwomen and men purchased fish for retailing, about 50 to 60 persons purchased fish for parcelling to outstations, and 8 to 10 stockists purchased fish for deep freezing. Practically all commission agents and co-operatives charged seven per cent commission from their principals—fishermen and fishermen's societies—whose fish they sold. However, co-operatives usually granted one per cent rebate out of their seven per cent commission to the co-operative societies offering fish for sale.

After verbal negotiations between the representatives of sellers and buyers, the market opened with a set selling price for each variety of quality fish everyday early in the morning at 5 a.m. These prices depended on the demand and supply. If fish were not lifted at this rate, either due to poor quality or some other reasons, within a few hours, they were auctioned at lower prices. Practically all major auction sales were completed by 10 a.m. Prices were usually lower in the fishing season, when the supply was large; they were the highest during the monsoon—an off season. Daily prices for various varieties of fish during November 1972 are given in Exhibit XI. Exhibit XII gives the different rates at which pomfret was sold by the TZMS sales office. If the prices quoted in the auction market were very low, TZMS sometimes purchased fish for deep freezing and sold it later in the expectation of profit.[1] However, so far it had not purchased fish from the consignments sent by the project.

Immediately after sales, the TZMS sales office prepared a bill giving details of the quantity, rate, and total value at which fish of each crate/case were sold and sent it to the project office where the account clerk checked the calculation and kept the bill on file. At the end of the month, the TZMS sales office sent a consolidated statement for each fish boat and overall bill for the project indicating the total sales, value, expenses such as TZMS' commission (seven per cent), cartage, hamali and market fee the deduction at a set percentage of sales value towards

[1] TZMS did not purchase any quantity for freezing during the season 1971-72 and the current season.

bank loan repayment,[1] and balance payable to the project. The project office completed each individual boat's current account in which debits for supplies and cash payment to the groups of boat were also recorded. They also kept accounts for each boat for the boat loan and temporary loan, besides the current account and adjusted repayment of these loans in the proportion of 60% towards boat loan and/or temporary loan account and 40% towards the current account as per the bank's requirements. Between the boat loan account and temporary loan account, the first recovery was effected towards the temporary loan account.

The project office, after the completion of accounts, rendered monthly accounts to each group of fishermen by the 6th or 7th of the next month. If there was any balance payable to the group after recovering the amount on account of supplies and requisites in the current account, the group could withdraw it. However, in case of a debit balance, the general manager of the project could do very little to recover the amount.

Though the boat and engine lives were considered to be more than 10 years (a period over which the instalment payments of the loan were spread), the navigational lights, fire-fighting equipment, accessories, and fishing gear had a much shorter life and needed replacement. Usually, in the off season (May-August) fishermen repaired their nets for which they required nylon twines, nets, ropes, floats, sinkers, etc., and overhauled some parts of the boat. It was estimated that about Rs. 13,000 would be needed per year per boat for maintenance and replacement. The project envisaged the payment of this amount to the fishermen's group at one time in the off season, to be recovered by the end of the next fishing season, i.e., May. Since the boat had gone into operation only a few months back, only a few payments had been made so far. In some accounts, the full recovery of such loans had been effected. However, in a few accounts, some amounts were still outstanding. The project office first adjusted any deduction from the sales proceeds of fish in their temporary loan account and thereafter, in the boat loan account as was done by the bank.

The General Manager's Problem

Mr. Divekar was concerned about the increasing debit balance in the current accounts of some groups. He did not know what measures he should take to make the project successful. Some groups were handling over their catches to them since the operation of the scheme, but except for taking care of the variable expenses of the boat trips, the project had not paid them anything for their family needs. He was finding it difficult to enforce their decision to limit their credit for requisites and supplies to 40% of the previous catch as the next trip required a larger credit even for the bare requirements like diesel, mobile oil, and ice. Some of the groups which had brought large catches in the earlier season were bringing lower catches in this season. (A statement showing fish catches and their values for the period November 1971 and November 1972 is given in Exhibit XIII. Also catches by some boats and their values during the period August 18, 1972 to October 31, 1972 are given in Exhibit XIV). In the overall supplies, there was a shortfall of 47,257 Kg. of fish (Rs. 47,668 by value) by November 1972. (Exhibit XV). He wondered whether the season was bad that year for fishing or whether some boats were not handing over their total catch to the project or whether they did not know where to get fish catches. (A statement showing the catches of some other gill net boats operating in the same area and selling their catches through a private commission agent is given in Exhibit XVI). He was considering what information he should collect and what action he should take to increase fish production and to sell it at a higher price. Earlier they had thought of asking the group to maintain a log book,[2] but this was not introduced so far.

He believed that he could do very little on the marketing side, as that was handled by the TZMS sales office over which he had no control. He wondered if any control on market prices could be exercised by him. Should he hold supplies in anticipation of higher prices to fishermen? Sometimes fish was kept in the Sassoon Society's cold storage at a cost of 50 Ps. per case, but this was only for one or two days either due to delay in transporting or if the catches brought to the project were too small to be despatched to Bombay. Moreover, TZMS was purchasing fish on its own for freezing purposes, but he was not sure whether this should be done on behalf of the group of fishermen instead of the TZMS and if so who should take the decision.

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[1] The authorities of the co-operative bank had decided that in the first year of the operation of the scheme, the catches brought by each group be adjusted towards the loan account and the temporary loan for replacement of gears and maintenance. This percentage was revised to 60% in the second year of opeartion as the value of the catches brought by the groups were not sufficient to cover the bank loans. The bank first recovered the temporary loan, if any, from such deductions and, thereafter, made adjustments towards the boat loan. The bank maintained the loan accounts in only one name, viz. the Thana Zilla Machhimar Sahakari Sangh Project. However, the TZMS project office maintained boatwise loan accounts.

[2] In the log book, an account of each trip was to be recorded. It would contain details of diesel, mobile oil, ice, other supplies, catches brought, etc., for each trip.

He was also concerned about the replacement of the maintenance requirements of fishermen. Some groups, it appeared to him, would not be in a position to repay the amounts from the value of the catches delivered to the project.

He wondered whether the overall systems and procedures adopted by the project provided any incentive for more production and delivery of catches to the project.

EXHIBIT I

Account of the Boat 'Anuradha'

HEADMAN: SHRI ANIL CHOWDHARY

Month		Debit for Supplies & requisites	Credit for Fish deliveries and sales	Balance Debit/Credit	Dr./Cr.
		Rs.	Rs.	Rs.	
November	1971	3684.00	1332.00	2352.00	Dr.
December	"	3576.00	2349.00	3579.00	"
January	1972	1826.00	1052.00	4353.00	"
February	"	2328.00	1407.00	5274.00	"
March	"	1597.00	1038.00	5833.00	"
April	"	1353.00	1012.00	6174.00	"
May	"	1970.00	1686.00	6458.00	"
June	"	662.00	—	7120.00	"
July	"	—	—	7120.00	"
August	"	56.05	—	7176.05	"
September	"	1852.99	1199.95	7829.04	"
October	"	2034.09	1236.70	8626.43	"
November	"	1800.40	1920.20	9206.72	"

TEMPORARY LOAN

Loan amount granted in June/July 1972	Amount recovered till Nov. 1972	Balance amount to be recovered by the end of May 1973
Rs.	Rs.	Rs.
10,055.90	3,653.85	6,402.05

BOAT LOAN

Month of loan disbursement	Amount of loan Rs.	Amount recovered till Nov. 1972 Rs.	Balance amount to be recovered Rs.
November 1971	86,256.83	4,038.36	82,218.47

EXHIBIT II

Account of the boat 'Kalpana'

HEADMAN: SHRI FANDURAG BUDHA MEHER

Month		Debit for Supplies & requisites	Credit for Fish deliveries and sales	Balance Debit/Credit	Dr./Cr.
		Rs.	Rs.	Rs.	
November	1971	700.35	1659.50	959.15	Cr.
December	"	1941.80	1399.50	416.85	"
January	1972	1470.87	556.50	497.52	Dr.
February	"	1970.65	1236.25	1231.93	"
March	"	1236.68	561.50	1907.11	"
April	"	1216.32	657.25	2466.18	"
May	"	2170.19	730.00	3906.37	"
June	"	2604.55	—	6510.92	"

Month		Debit for Supplies & requisites	Credit for Fish deliveries and sales	Balance Debit/Credit	Dr./Cr.
		Rs.	Rs.	Rs.	
July	1972	—	—	6510.92	Dr.
August	"	—	—	6510.92	"
September	"	704.58	357.95	6857.55	"
October	"	1770.32	636.60	7991.27	"
November	"	1508.29	588.20	8911.36	"

TEMPORARY LOAN

Loan amount granted in June/July 1972	Amount recovered till Nov. 1972	Balance amount to be recovered by the end of May 1973
Rs.	Rs.	Rs.
7368.15	1490.70	5877.45

BOAT LOAN

Month of loan disbursement	Amount of loan Rs.	Amount recovered till Nov. 1972 Rs.	Palance amount to be recovered Rs.
November 1971	86,256.83	1,941.20	84,315.63

EXHIBIT III

Account of The Boat 'Divyatara'

HEADMAN: SHRI VISHWANATH PARSHURMA. MEHER

Month		Debit for Supplies & requisites	Credit for Fish deliveries and sales	Balance Debit/Credit	Dr./Cr.
		Rs.	Rs.	Rs.	
October	1971	4856.00	3150.00	1706.00	Cr.
November	"	4355.00	4631.00	1430.00	"
December	"	2949.00	4241.00	138.00	"
January	1972	2779.00	2676.00	241.00	"
February	"	1926.00	2924.00	757.00	Dr.
March	"	2273.00	2467.00	951.00	"
April	"	2447.00	2578.00	1082.00	"
May	"	2596.00	3965.00	2451.00	"
June	"	—	1411.29	3862.29	"
July	"	3862.29	—	—	
August	"	674.48	715.48	41.00	"
September	"	1352.75	1810.29	798.54	"
October	"	2935.76	2660.25	1074.05	"
November	"	2284.87	2419.20	859.72	"

TEMPORARY LOAN

Loan amount granted in June/July 1972	Amount recovered till Nov. 1972	Balance amount to be recovered by the end of May 1973
Rs.	Rs.	Rs.
10,499.40	8,250.71	2,248.69

BOAT LOAN

Month of loan disbursement	Amount of loan Rs.	Amount recovered till Nov. 1972 Rs.	Balance amount to be recovered Rs.
October 1971	86,256.83	14,144.11	72,112.72

EXHIBIT IV

Account of the Boat 'Pavan Nauka'

HEADMAN: SHRI YASHWANT NARAYAN MEHER

Month	Debit for Supplies & requisites	Credit for Fish deliveries and sales	Balance Debit/Credit	Dr./Cr.
	Rs.	Rs.	Rs.	
October 1971	3797.00	2965.21	825.79	Cr.
November "	5348.25	4330.70	1843.34	"
December "	4393.50	4677.00	1559.84	"
January 1972	2369.50	3868.07	61.27	"
February "	3170.00	4333.98	1102.71	Dr.
March "	2152.75	2120.59	1070.55	"
April "	3421.90	2882.36	531.01	"
May "	4169.75	3924.37	285.63	"
June "	—	2593.21	2878.84	"
July "	2878.84	—	—	"
August "	751.44	751.44	—	"
September "	2180.06	2642.36	462.30	"
October "	3621.42	2551.70	1532.02	"
November "	3533.96	4460.25	605.73	"

TEMPORARY LOAN

Loan amount granted in June/July 1972	Amount recovered till Nov. 1972	Balance amount to be recovered by the end of May 1973
Rs.	Rs.	Rs.
7,843.10	7,843.10	—

BOAT LOAN

Month of loan disbursement	Amount of loan Rs.	Amount recovered till Nov. 1972 Rs.	Balance amount to be recovered Rs.
October 1971	86,256.83	21,499.36	64,757.47

EXHIBIT V

DISTRICT WISE ESTIMATED SEAFISH PRODUCTION
(in Metric Tonnes)

Year	Thana	Greater Bombay	Colaba	Ratnagiri	Total
1960-61	65,649	51,664	18,884	54,286	1,90,483
1961-62	74,344	29,760	8,886	9,449	1,22,439
1962-63	49,742	25,733	17,534	47,461	1,31,471
1963-64	45,154	39,990	18,838	44,558	1,48,540
1964-65	63,277	89,332	26,268	30,338	2,09,215
1965-66	50,845	47,068	28,122	22,498	1,48,533
1966-67	42,464	60,401	34,823	20,739	1,58,419
1967-68	98,845	60,879	39,885	28,063	2,27,672
1968-69	1,01,408	55,531	46,696	23,187	2,26,822
1969-70	86,593	70,977	40,602	36,330	2,34,502
1970-71	55,601	65,169	36,391	47,257	2,04,358

Source: "Statistics of Development in Fishing Business" by Mr. Alvani, Statistical Officer, published in the journal of Fish Development No.7, 15th August, 1972.

EXHIBIT VI

Comparative Figures of Fishermen, Bots, Nets, etc.
In Maharashtra State and Thana District 1965 & 1969

	Item		Maharashtra State 1965	1969	Thana Dist. 1969
1	Fishermen's family		26,527	31,282	8,538
2	Population of fishermen		162,714	192,042	55,356
3	Active fishermen		32,133	35,795	9,979
4	Fishermen involved in allied fisheries work		39,221	49,995	14,846
5	Mechanized boat		1,598	2,095	719
6	Non-mechanized boat (Sailing)		2,858	2,853	240
7	Non-mechanized boat (Small tonies)		4,875	4,701	599
8	Boat according to type of nets:				
	a) Doll (Bag) Net: Mechanized		1,049	1,211	
	Non-mechanized		3,007	3,229	
	b) Gill Net:	Mechanized	1,757	2,604	
		Non-mechanized	453	482	
	c) Trawling Net:	Mechanized	55	365	
	d) Khanda (Drift) Net: (Hooks & Lines)	Mechanized	38	30	
		Non-mechanized	1,105	506	
9	Total number of nets:				
	a) Bag net			21,334	8,904
	b) Gill net pieces (40 fathones)			138,314	30,696
	c) Trawl nets			915	27

Source: 'Statistics of Development in Fishing Business' by Mr. Alvani, Statistical Officer, published in the Journal of Fish Development, No. 7, 15th August 1972.

EXHIBIT VII

Required Investment and Financial Arrangement for the boat to be operated under Fisheries Co-operative Project Scheme

INVESTMENT			Rs.
a)	Hull 40' x 12' x 3' with insulation of 3" x 4" for fish and ice holds, quarter decking on rear 1/2 portion on front side shed over engine and water tank painting, electrical insulation 58 to 65		40,000
b)	Engine and its accessories:	Rs.	
	i) Engine 58 to 65 HP	48,650	
	ii) Installation charges	750	
	iii) Oil tank	1,000	
	iv) Engine piping and accessories	600	51,000
c)	Navigational lights, fire-fighting equipment and accessories		8,000
d)	Fishing gears		21,000
		Total	1,20,000

TO BE FINANCED BY

Item	Federation's share @ 1% Rs.	Special requisite subsidy by State Govt. Rs.	Bank loan Rs.	Total Rs.	
Hull	400	4,000*	35,600	40,000	
Engine and its accessories	510	25,500*	24,990	51,000	
Navigational lights fishing gears		—	—	29,000	29,000
Total	910	29,500	89,590	1,20,000	

*State Government provides subsidy @ 25% limited to Rs.4,000 on the Hull. It also provides 50% subsidy on the engine and its accessories.

EXHIBIT VIII

Economics of Operating a Mechanized Boat to the Group Under Co-operative Fisheries Project in Thana District of Maharashtra State

ANNUAL REVENUE

		Rs.
1	30 tonnes of pomfrets @ Rs.2,500 per tonne	75,000
2	20 tonnes of fish as wasu, etc. @ Rs.2,000 per tonne	40,000
	Total	1,15,000

ANNUAL EXPENDITURE ON OPERATING THE BOAT

		Rs.	
1	STAFF		
	One tandel @ Rs.150 per month for 9 months	1,350	
	Nine deckmen @ Rs.100 per month for 9 months	8,100	
	Food expenses @ Rs.3 per person for 9 months	8,100	17,550
2	DIESEL, MOBILE OIL, ICE, ETC.		
	High speed diesel 12,240 litres or 61 barrels* @ Rs. 160 a barrel	9,760	
	Mobile oil 400 litres or 2 barrels @ Rs.450 a barrel	880	
	Cost of ice $1\frac{1}{2}$ tonnes @ Rs.50 per tonne on 40 trips (Rs. 75 x 40)	3,000	13,640
3	TRANSPORT AND COMMISSION		
	Transport charges for fish from port of landing to Bombay	6,000	
	Commission on sale of fish @ $6\frac{1}{2}$ %	7,187	13,187
4	REPAIR AND MAINTENANCE		
	Repairs to net	1,000	
	Maintenance of hull and engine:		
	a) Painting	1,500	
	b) Overhaul	900	
	c) Spares	1,500	4,900
5	INSURANCE OF BOAT, ENGINE AND CREW		
	Insurance of boat and engine	2,500	
	Workmen compensation	5,000	7,500
6	DEPRECIATION		
	Replacement of gear @ 50%	10,500	
	Depreciation on engine and other accessories @ $8\frac{1}{2}$ %	4,350	
	Depreciation on hull @ 5%	2,000	
	Depreciation on navigational lights, Fire-Fighting equipment and accessories @ $8\frac{1}{2}$ %	700	17,550
7	INTEREST		
	On bank loan @ 5%	4,186	
	On 50% of total working capital of Rs.71,992 @ $6\frac{1}{2}$ %	2,337	
		6,523	
	Less: Interest on depreciation fund of Rs. 17,550 @ 6%	1,400	5,123
8	UNFORESEEN CONTINGENCIES		2,000
	Total annual expenditure		81,450
	Profit on operation		33,550
	Repayment of bank loan instalment (1/10th of Rs.89,590)		8,959
	Net amount available by way of profit to fishermen group		24,591

* This requirement has been assessed on the assumption that each vessel will fish for 20 days in a month and, therefore, in a period of eight months fishing season the number of fishing days will be 160. The engine will work for about 12 hours a day, i.e., 1920 hours (160 x 12) in the season. After every four days it will have to touch the port to unload the fish and the time requirement to touch the port and back would be three hours. It is assumed that the vessel would make 40 such trips in the season and, therefore, engine working hours would be 120 hours (40 x 3). Thus total working hours would be 2040 (1920 + 120) and high speed diesel requirement would be six litres an hour, i.e. 12,240 litres in total or 61 barrels.

EXHIBIT IX

Draft Agreement Between the Boat Group and TZMS
(Translated from Marathi Version)

We, the undersigned partners of the boat group in the Co-operative Fishing Project enter into the agreement with the Federation (TZMS). The Maharashtra Government has sanctioned the Thana District Co-operative Fisheries Project and has given it to the Federation for implementing it. We the partners of the boat group had applied to the Federation to approve of our group and the Federation has approved it.

We, the chief of the group and my partners, enter into the agreement with Thana District Fishermen's Central Co-operative Federation Limited that have accepted from the Federation the Boat No..., and engine, other implements, and nets, etc. mentioned in Appendix A, which belongs to the Federation, on Hire Purchase basis.

We agree that:

1 We shall remit the yearly rent of the above mentioned boat, as the annual instalment under Hire Purchase scheme, out of the proceeds of the sale of fish, beginning from the first season, regularly and without fail. We shall accept due receipt from you.

In case of default on our part, you can reserve your rights to cancel the agreement of Hire Purchase and to take back from us the boat and other implements (which are loaned by you to us).

2 We shall keep the boat in our possession and at the location mentioned by the Federation. We shall not give it to others, sell it, mortgage it, or dispose of it otherwise, without your written permission.

3 We shall pay the insurance premium on the boat regularly.

4 If for any inevitable reasons or misfortune, that boat and implements are damaged, we (entering into contract) make good the loss of the sum from our fixed assets. The sum to be made good for will be in excess of repaid instalments and interest paid by us so far.

5 Total price of the boat is to be paid in 10 yearly instalments.

6 If we abide by all terms and pay the rent of the boat (with principal and interest) in 10 instalments, then, you will accept this sum as the price of the boat and implements and will transfer the ownership of the same to us.

7 We should have paid you the sum as agreed to in (1) as yearly instalments, before you give us the receipt for the sale of the boat.

8 If we do not pay instalments regularly, or do not abide by any term properly, then we cannot ask the Federation to sell us the boat. If the agreement is cancelled, you are not bound to sell the boat to us. Under these circumstances you have the right to retain the amount paid by us as the rent. We will not complain, and return the boat and implements to you in good working condition compensating for any damage.

9 This boat will be used only for catching and transporting the fish.

10 The boat will be examined every year by the Fishery Department Office. We abide by their decisions.

11 Until all instalments on the boat etc. are paid, and until the Federation demands it, we shall sell all or fresh and dried fish through the Federation. We shall give them daily production figures. If we do not give them fish, they have the right to reclaim the boat from us.

12 As the Federation has taken loan from the Government and the Thana District Central Co-operative Bank for building the boat, and as the boat is a collateral to this loan, we shall abide by the terms set by the bank until the loan is repaid.

13 We abide by conditions set by the Thana District Fishermen's Federation from time to time.

14 The first part (i.e. Federation) will be legal owners of the boat, implements, etc. mentioned in Appendix until the agreement is over and the sale completed. In case the Federation thinks that the agreement is broken, the other party to the contract (i.e. we) should make good the loss of the Federation and if we do not do so, the Federation through customs and police can recover all the implements, boat, etc.

Similarly, as chief of group and partners we agree to following conditions:

15 We will not give nets and accessories etc. o anyone else. If it is found that we have given the nets, etc. to others or other groups, we are open to criminal suit.

16 We shall go on a fishing trip only with required outside people. If any partner is absent, we shall give written intimation to the Satpati Project Office.

17 We shall note in the boat's log book all information of the fishing trip and give it to the Project Officer for signature.

18 We would not give or sell our catch to others or load on other boats. If we are found doing so by the Project Officers, it will be a cognisable offence.

19 When we go for a fishing trip, or return from it, or on it, the officers of the project office have full right to examine our boat. We won't obstruct and will give full co-operation.

20 After a fishing trip, we will give full report of the fish caught, etc. and hand over all the fish catch (except that which can't be sold in Bombay and other markets) to the officers of the project.

21 Fins and edarblande collected after every fishing trip will be handed over by us to the project offices. We should be paid and credited to our account its market price.

22 We shall purchase diesel oil, mobile oil and ice only from the Thana District Co-operative Federation and not from other traders.

23 We shall complete our accounts by 31st May of every year, paying to the Federation our share of the instalment of bank loan and interests thereon.

24 The money accruing to us out of sale of fish will be used by us to make expenditure on ice, diesel, and consumption expenditure. We will not demand advances from the Federation. In every month, we shall at least, make five trips to catch.

25 We shall seek advice, if it found that our production is less than that of other boats in the project and try to increase production.

26 We shall go in the port designated by the Federation, to catch fish.

27 If we don't abide by any of the above mentioned terms. The Federation has the right to cancel the agreement or demand back boat and implements from us.

28 We abide by terms set by the Federation from time to time.

EXHIBIT X

Map of Maharashtra Coastal Area Surveyed for Fishing

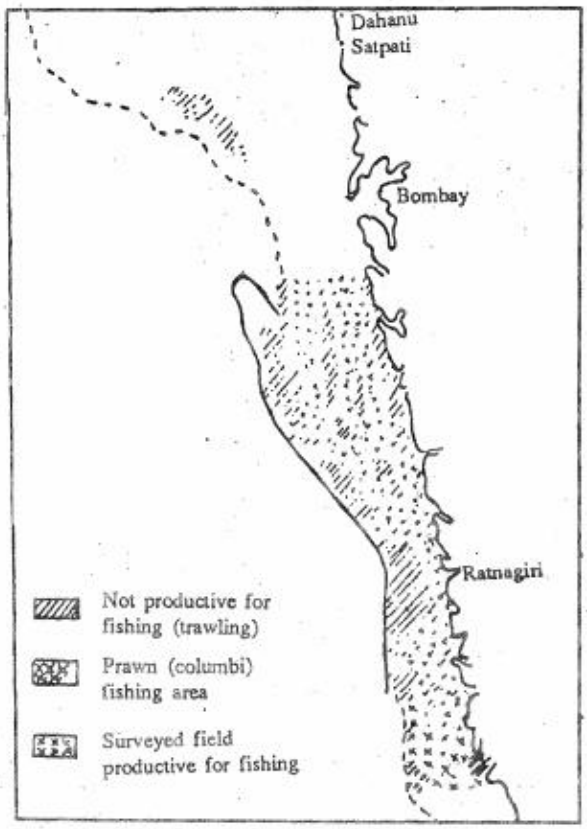


EXHIBIT XI

Opening Rates for Various Types of Fish During November 1972

Date	Rs. per	Saraga Kodi	Vam Kodi	Combda Unit	Ghol Unit	Dara Unit	Bakas Kodi	Singara Unit	Narvy Unit	Karkara Unit	Tamb Unit	Halva Kodi
NOVEMBER	1	55	254	5.00	28	—	30	3.00	—	2.50	—	—
	2	55	464	—	17	—	30	—	—	—	—	—
	3	50	264	4.00	23	—	25	—	—	3.00	4.00	—
	4	40	242	3.50	12	42	18	—	2.50	2.00	3.00	—
	5	40	232	—	18	36	15	—	—	—	3.00	45
	6	38	220	3.50	15	—	16	—	—	—	—	—
	7	40	200	—	16	—	20	—	—	—	—	—
	8				—	—	Market closed	—				
	9	35	187	2.00	15	—	15	—	—	2.00	—	—
	10	35	187	3.50	14	—	18	—	—	2.50	6.00	—
	11	40	264	—	—	—	20	—	—	—	—	—
	12	40	187	3.50	16	—	22	1.50	2.00	2.00	5.50	—
	13	38	286	2.50	16	—	—	—	2.50	2.00	—	—
	14	40	200	3.50	16	—	16	1.50	—	—	6.00	—
	15	40	254	3.00	14	40	16	1.00	3.50	2.00	3.50	50
	16	42	286	2.50	12	—	22	—	—	—	5.00	—
	17	45	154	2.00	13	—	18	—	—	—	5.00	—
	18	45	220	2.50	18	—	20	2.50	—	2.50	4.50	45
	19	45	200	2.50	13	—	22	2.00	—	—	—	—
	20	45	264	2.50	16	45	26	2.50	2.00	2.00	5.00	—
	21	45	264	2.50	18	—	30	—	—	3.00	6.00	50
	22	45	308	—	12	—	—	1.50	—	—	—	—
	23	45	308	3.00	—	—	25	—	—	2.50	—	—
	24	50	308	2.50	—	—	30	—	—	—	—	—
	25	50	220	3.00	—	—	—	—	—	—	—	—
	26	55	286	—	—	—	—	—	—	—	6.00	—
	27	55	264	—	—	—	—	—	—	—	—	—
	28	55	308	3.00	—	—	30	—	—	4.00	—	55
	29	55	317	3.00	13	—	32	3.00	—	4.00	—	50
	30	50	320	2.50	13	—	35	—	1.50	3.50	5.00	45
RANGE FOR THE MONTH		35-55	154-464	2-5	12-28	36-42	15-35	1-3	1.50-3.50	2-4	3-6	45-55

EXHIBIT XII

Some Pomfret Consignments Sales on November 2 & 3, 1972

Date	Name of the boat	Total Consignments (Kodi)	Opening rate Rs.	Rate at which sold (Rs.)												
				55	50	48	42	40	36	35	33	28	25	24	22	20
Nov. 2	Divyatara	19	55	16		1.5		1.5								
Nov. 3	Himakanya	13	50			1.0			3.8		5.2				3	
" 3	Gangasagar	20	50		14	0.6	3.1						2.3			
" 4	Janaki Prasad	33	50				0.7		2.4	5.5	9.2	4.6		2.1	3	5.5

Prepared by case writer for case purposes only.

EXHIBIT XIII

Fish Catches by Some Boats During the Month of November 1972 and November 1971

Particulars	November 1972					November 1971				
				Average rate per					Average rate per	
	Nos.	Kgs.	Value	Kg.	Unit	Nos.	Kgs.	Value	Kg.	Unit
1	2	3	4	5	6	7	8	9	10	11
'KALPANA'			(Trips 4)					(Trips 3)		
Pomfret	825	525	1406	2.68	1.70	2008	1274	2925	2.30	1.45
Misc. (Bombay market)	110	294	190	0.64	1.73	168	546	394	0.72	2.34
Misc. (Local market)	108	235	160	0.68	1.48	130	330	125	0.38	0.96
Dry fish	129	168	103	0.61	0.80	45	125	40	0.32	0.89
Total	1172	1222	1859	1.52	1.58	2351	2275	3484	1.53	1.48
'ANURADHA'			(Trips 4)					(Trips 3)		
Pomfret	1962	1250	4344	3.48	2.21	1502	958	2140	2.23	1.42
Misc. (Bombay market)	1326	3413	456	0.13	0.34	144	449	525	1.17	3.64
Misc. (Local market)	160	345	170	0.49	1.06	120	310	108	0.35	0.90
Dry fish	158	215	162	0.75	1.02	38	128	35	0.27	0.92
Total	3606	5223	5132	0.98	1.42	1804	1845	2808	1.52	1.56

1	2	3	4	5	6	7	8	9	10	11
'DIVYATARA'			(Trips 5)					(Trips 6)		
Pomfret	3310	2105	2607	1.24	0.79	4933	3139	7770	2.47	1.58
Misc.(Bombay market)	192	434	326	0.75	1.70	409	1298	940	0.72	2.30
Misc. (Local market)	175	320	145	0.45	0.83	190	430	178	0.41	0.94
Dry fish	162	228	168	0.74	1.03	58	175	170	0.63	1.90
Total	3839	3087	3246	1.05		5590	5042	8998	1.78	1.61
'PAVAN NAUKA'			(Trips 5)					(Trips 5)		
Pomfret	3825	2434	6314	2.59	1.65	5953	3788	8897	2.35	1.33
Misc. (Bombay market)	1482	3372	2607	0.77	1.76	804	2049	1799	0.88	2.24
Misc. (Local market)	190	360	153	0.43	0.70	160	390	155	0.40	0.97
Dry fish	175	215	152	0.71	0.87	48	160	90	0.56	1.88
Total	5672	6381	9226	1.45	1.63	6965	6387	10941	1.71	1.57

EXHIBIT XIV

Fish Catches for the Period August 18 to November 31, 1972

Boat	Trips	Pomfret					Bombay Misc.					Local Misc.					Dry Fish				
					Average rate per					Average rate per					Average rate per					Average rate per	
		Nos.	Kgs.	Value	Kg.	Unit	Nos.	Kgs.	Value	Kg.	Unit	Nos.	Kgs.	Value	Kg.	Unit	Nos.	Kgs.	Value	Kg.	Unit
Pavan Nauka	26	5601	3587	10834	3.02	1.93	615	3038	5308	1.75	8.63	325	860	334	0.39	1.03	158	380	151	0.40	0.96
Divyatara	24	5403	3438	8260	2.40	1.53	511	2488	4504	1.81	8.81	312	803	308	0.38	0.99	145	335	131	0.39	0.90
Anuradha	14	1880	1954	5801	2.97	3.08	708	1459	1290	0.88	1.82	290	737	309	0.42	1.07	99	243	119	0.48	1.20
Kalpana	5	1604	1032	2321	2.25	1.45	109	268	164	0.61	1.50	289	718	288	0.40	1.00	144	279	112	0.40	0.78
Jayapari	5	3726	2372	5658	2.38	1.52	952	352	1110	3.15	1.17	165	400	150	0.38	0.91	75	150	100	0.67	1.33
Jalchandratara	2	550	350	1004	2.87	1.83	2	14	26	1.86	13.00	105	306	95	0.31	0.90	30	115	25	0.22	0.83

EXHIBIT XV

Budgeted and Actual Production and its Value
1972-73

Month		No. of boats in operation	Budgeted porduction Kgs.	Actual production Kgs.	Difference Kgs.	Budgeted value Rs.	Actual value Rs.	Difference Rs.
August	1972	7	10,000	4,798	(5,302)	15,000	10,501	(4,499)
September	"	16	45,000	20,775	(24,225)	68,000	47,745	(20,255)
October	"	36	70,000	85,483	15,483	1,05,000	1,41,664	36,664
November	"	40	1,60,000	1,26,807	(33,193)	2,40,000	1,80,422	(59,578)
December	"	40	1,75,000	—	—	3,50,000	—	—
January	1973	40	1,80,000	—	—	3,60,000	—	—
February	"	40	1,50,000	—	—	3,00,000	—	—
March	"	40	1,40,000	—	—	2,80,000	—	—
April	"	40	1,35,000	—	—	2,90,000	—	—
May	"	40	1,25,000	—	—	2,50,000	—	—
	Total		11,90,000		(47,237)	22,38,000		(47,668)

EXHIBIT XVI

Value of Catches Brought by Some Gill Net Boats at Satpati Area to one of the Private Commission Agent in Bombay Market

Name of the boat	Month in which operation started	Value of catch during the month of Nov. 1972 Rs.	Value for the season upto Nov. 1972 Rs.
Krishna Govind Tare	September	11,079	45,497
Bhumija	September	12,777	40,810
Geet Ganga	Sept./Oct.	8,403	36,257
Ratan Nouka	September	13,900	39,294
Ganga Prasad	October	3,494	8,738

Source: Record of a private commission agent—Mr. Abdul Sattar. Mr. Abdul Sattar handles roughly 18 to 20 per cent of total fish brought in the Bombay auction market.

CHRISTIAN MEDICAL COLLEGE AND HOSPITAL, VELLORE

Dr John K.G. Webb, Director of the Christian Medical College and Hospital (CMCH), Vellore, Tamil Nadu, wrote to the representatives of the IIMA Alumni Association early in August 1971:

> I hope you will forgive me for my rather abrupt approach on the phone regarding a possible time for meeting . . . . . The SQCU* has been doing some preliminary work on the preparation of a long-term forecast of income and expenditure for this institution. We were discussing the data yesterday and realized that we had reached a point in this task where we needed help. Both Mr Prasad* and we will very much look forward to discussing this problem with you.

At the meeting, Dr Webb was accompanied by Mr K.G. Koshi who was to succeed Dr Webb as Director in October, and Mr Jacob, Treasurer of CMCH.

Dr Webb and his top management team were concerned with the financial results for the year 1970-71, which showed a deficit of Rs. 1.26 million (8.6% of the total expenditure for the year). They were keen on forecasting the income and expenditure levels for the next five years, 1971-72 to 1975-76, in an attempt to anticipate financial problems and initiate corrective action.

BACKGROUND

CMCH had its beginning in 1900 when Dr Ida Scudder started her work in one room in her father's bungalow on the outskirts of Vellore in response to "The challenge which God set before her".

In 1893, when she was on a visit to her father, a missionary doctor, "In one night three girls, Hindu, Brahmin, and a Muslim, lay dying in childbirth for lack of a lady doctor." "With a very troubled heart she heard next morning from her father's servant that all three girls had died because she had not been qualified to help them. She resolved to study medicine and return to help the women of India."[1]

Realizing that many patients in the villages could not come even as far as Vellore for treatment, she initiated "roadside clinics" in 1906. Since then taking care of the sick and needy in small villages around Vellore has been a regular feature of the hospital.

The hospital has had steady growth. By 1971, it was one of the largest health complexes in India, operating a 1123-bed hospital, an advanced research centre, and nursing and medical colleges. It employed 385 doctors and 659 paramedical staff. Exhibit 1 gives data regarding the activities of the hospital as of 1971.

ORGANIZATION

The CMCH was run by the CMCH Association. The management of the affairs of the association was the responsibility of the College Council and the Executive Committee.

College Council: Any church in India not smaller than a diocese which contributed Rs 2,500 per year towards CMCH Association was entitled to become a corporate member. Each corporate member can nominate a representative to the Council. Any church or similar body outside India which contributed Rs 15,000 or more was also a member of the Council. All administrative officers (as defined in the Constitution) and seven members of the staff of the College and Hospital — two selected and five nominated — were also represented on the Council. Further, several positions in the Council were reserved for organizations like the Christian Medical Association of

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* In-charge, Statistical Quality Control Unit (SQCU), Madras. SQCU undertakes consulting work on a retainer basis. They have been associated with CMCH from 1965-66.

Written by C. K. Prahalad. The case is based on the work done by the Indian Institute of Management, Ahmedabad, Alumni Association, Madras Chapter. Besides the case writer, Mr Tilak Shankar and Chandrasekhar, both alumni of IIMA, were involved in the project.
Case material of the Indian Institute of Management, Ahmedabad, is prepared to serve as a basis for class discussion. Cases are not designed to present illustrations of either correct or incorrect handling of administrative problems.
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[1] Christian Medical College and Hospital, Vellore, Tamil Nadu, India — Facts and Figures 1970-71, p. 3.

India, Catholic Hospital Association, Director of the Union Mission Tuberculosis Sanatorium, Arogyavaram, etc. There were 15 co-opted members. In all, there were over 100 members of the Council in 1971. The Council's main functions were a) to adopt an Annual Budget and b) to control the general policy, development, and expenditure of the College and Hospital.

Executive Committee: The Executive Committee consisted of the officers of the Council — Chairman, Vice-Chairman, and Secretary — and the Director, Principal, and nine to eleven elected members of the Council (of whom three may be members of the staff). The Executive Committee managed the affairs of the Council in the intervals between regular meetings.

Internal Organization: CMCH, like a typical hospital, was organized into clinical and service units. Clinical units in a hospital system (like surgery and general medicine) are the equivalents of line departments in a manufacturing organization. A ward was assigned to each clinical unit, and the number of beds in the ward were dependent on the popularity of the clinical unit and the demand for that speciality. Service units (like diagnostic pathology, biochemistry, and blood bank) formed the staff function. Service units provide the diagnostic services to the clinical units. In addition, the hospital has an administrative service consisting of personnel, finance, public relations, etc.

The Director was responsible for the administration of the college and hospital in accordance with policies approved by the Council and the medium of communication between all committees ... "and individual members of the staff on the one hand and the Council on the other."

The Director was assisted by two Associate Directors — one medical and one lay. In addition, the Constitution had provision for several Deputy Directors. CMCH's principal administrative officers were the following:

1 Director
2 Two Associate Directors
3 Deputy Director(s)
4 Treasurer
5 General Superintendent
6 Principal
7 Dean of the College of Nursing
8 Medical Superintendent
9 Nursing Superintendent

The Director was responsible for the entire CMCH complex: teaching, research, and the hospital. The Associate Director (medical) helped the Director with all the medical aspects of the three major activities. The Associate Director (lay) was responsible for all the non-medical aspects of the complex — finance, personnel, administration, etc. There was a provision for several Deputy Directors (both medical and lay). The Treasurer was in charge of accounting, credit collection, stores and inventory control, payroll, and costing. The General Superintendent was responsible for transport, diet, public relations, purchase, engineering services, laundry, and personnel (all non-medical employees). The Medical Superintendent was in charge of all the medical services of all clinical and service units in the hospital. The Nursing Superintendent was responsible for the deployment of all nurses and nursing auxiliaries. An organization chart as of February 1972 is given in Exhibit 2.

An interesting feature of the hospital organization was the multiple role requirement of the medical and nursing staff. Clinical and service unit heads, for example, were also professors at the Christian Medical College (CMC). They reported to the Principal as professor and to the Medical Superintendent as clinical or service unit heads. The senior nursing staff were on the faculty of the nursing school. Students from both the nursing and the medical colleges worked in the hospital for experience under the supervision of the hospital staff.

Several clinical and service unit staff were also involved in the on-going research programmes. Many senior members of the hospital were at the same times teacher practitioners and researchers, and it was difficult at times to identify a decision with any specific activity.

GROWTH OF CMCH

In the early years the hospital was financed largely by donations from abroad, notably the USA and from the churches in India. The sources and uses of funds for the years 1967-68 to 1970-71 and other related data are given in Exhibit 3. The details of expenditure for 1970-71 is given in Exhibit 4.

CMCH had become an undisputed leader in the area of teaching, research, and innovation in health care in India. Exhibits 5 and 6 show some research projects in progress in 1972 and the "firsts" in medical advances in India achieved by the CMCH over the years. The major reasons for its sustained excellence, according to an insider, were the following:

1 The hospital was founded on a missionary spirit to train men and women in India in the art and science of medicine "and to equip them, in the spirit of Christ, for service in the relief of suffering and promotion of health." This objective demanded a high degree of dedication to excellence and commitment to service.

2 A large number of doctors were sent abroad for specialized training. Several highly qualified doctors and researchers came to Vellore from the USA for long periods in a spirit of service.

3 The management actively promoted the quest for excellence. Around 1962, it initiated a scheme called "special fund" to promote the growth of clinical units. The fund made available a discretionary amount to the clinical units for growth.

4 Almost all the expansion of facilities were financed by donations from charitable organizations abroad or through gifts from grateful patients. Clinical units enjoyed growth commensurate with their ability to attract funds from these sources. This had a salutary effect. The clinical units were, in fact, unfettered and operated independently adhering to the broad policies of the hospital. It encouraged individual initiative and the drive towards excellence.

CMCH IN 1971

The workload of the hospital measured in In-patient (IP) days and Out-patient (OP) visits are given for the period 1964-65 to 1970-71 in Exhibit 7. The average increase in workload of the various clinical units for OP and IP is given in Exhibit 8. CMCH's personnel as of 1971 is indicated in Exhibit 9.

PRICING

For pricing, the patients were divided into four groups — private patients, patients who pay at standard, partly paying, and free patients. The hospital recovered from the private patients the total costs (called standard plus a margin profit), from patients who pay only at standard the total actual cost, from those who pay partly a percentage of actual cost which varied with the patients, and from the poor and needy patients nothing at all. The distribution of in-patients and out-patients by these groups for a representative period (September-November 1970) for various clinical units is given in Exhibit 10.

The Out-patients were charged as follows. The hospital charged Rs 35 for private patients. The other patients were not charged consulting fees though all three groups were charged Rs 2 towards "medical record" charges. An OP could visit the hospital as many times as he needed to and no additional consulting charges were levied. The charges for diagnostic tests were levied on the basis of the tests conducted and the patient group (paying, non-paying, etc.) to which the patient belonged.

CHARITY

The doctors at CMCH had the discretion to give concessions to the patients based on their evaluation of the patient's needs and his ability to pay. Typically, bills were prepared at standard for all patients (other than those in private wards who paid on a standard plus basis), and the senior doctors in the clinical unit could reduce the total bill based on their judgement. The extent of reduction could be from 5% to 50%. These concessions were called "charity". Exhibit 11 gives details of the contribution of the major clinical units for both OP and IP, including the extent of "charity".

Doctors who were motivated by the missionary concept of service zealously guarded their right to write off the bill, if they were convinced that the patient needed help. A senior doctor said:

> There should be a clear understanding and implementation of the policy of missionary hospital regarding charity. Medical facilities in the country have been improving fast and no Christian medical institution can now try to provide facilities technically superior to anything available anywhere outside. But if they conform to their missionary objectives, they can provide service which is superior in its human quality and

conformity to high standards of medical ethics which patients and the relatives value highly and which is hard for money to buy. It is specially this human quality which attracts to missionary hospitals patients who are in a position to buy service of the same technical quality. From the point of view of the missionary hospital, the principal reason for maintaining paying wards and treating patients who could very well afford to go to hospitals which sell equally good even more comfortable facilities, is to earn money with which to give free treatment of high technical, human and ethical quality to poorer patients who cannot afford to buy them outside. In other words, the pay wards exist only to make charity wards possible.

Another senior doctor observed:

> As far as charity is concerned we need to separate the entirely free patient from the patient who pays varying degrees of the cost of treatment. We talk about the human quality of medical care. I do not believe that this has anything to do with religion. It is something which qualifies us to be called human; opposite types of behaviour are in human qualities. Part of this basic human quality of medical care is to ensure that the sick patient is given the best possible care regardless of the ability to pay. There are many who feel that the human quality of our medical care has gradually deteriorated during the past few years, and I would be inclined to agree with them.

The percentage of charity for the years 1961-62 to 1968-69 is given for both OP and IP in Exhibit 12.

HEALTH PROFILE OF THE REGION

The region around Vellore saw a phenomenal growth in health care facilities during the years following Indian Independence. Madras city (100 miles from Vellore), the capital of the State in which CMCH is situated, for example, expanded the facilities available at the government hospitals — the General Hospital, Stanley Medical College and Hospital, Royapetah Hospital, and Kilpauk Medical College and Hospital. The total bed strength of these government-owned hospitals was about 3,000. The facilities available were equal to that of Vellore in several areas. CMCH, it was felt, had to improve its sophistication to be competitive. One doctor commented:

> A hospital of this kind (CMCH) is dependent on external patients referral. We have to use a "oneupmanship" game to very large extent and have to stay ahead of and provide more than what any other teaching hospital can provide to continue to attract the patients. The minute we lose our leadership in any of these fields, we would automatically begin to lose private patients referral. So much so, many improvements and newer equipment, although by themselves may not be very necessary nor monetarily rewarding, would be essential simply to keep up this leadership over and above other hospitals. This would especially be so in the speciality departments. It may even be necessary to add on a few gimmicks and trimmings to attract these patients. Some of these like phonocardiography are quite simple and inexpensive while others can be quite expensive, but the general principle of staying ahead of others has to be maintained.

The clinical units in the hospital were generally divided into General, Specialities, and Higher Specialities.

The clinical units in the hospital were generally divided into General, Specialities and Higher Specialities, based on the sophistication of the medical technology used by them. An analysis of the patient profile by clinical units, classified on the basis of the region of the patients, is given in Exhibit 13.

Commenting on the patient profile at CMCH senior professor of Cardiology observed, "We used to get, even as late as 1960, simple cases in the clinic. Now, 9 out of 10 are cases which have several complications and who have been to not one but at times several physicians/hospitals before they think of CMCH. Increasingly, the work is getting very sophisticated." In fact the situation was such that they had difficulty in attracting enough patients with common ailments, so necessary for a teaching hospital with undergraduate students.

CMCH'S RESPONSE

The need for excellence and the competitive pressure on CMCH called for an organisation response. The response in many ways was clinical unit-based. Each unit reacted uniquely. Most of them improved the technological sophistication. New specialities were created. For example, nephrology was higher speciality carved out of Medicine; Open-heart surgery was another. The "drive" of the clinical unit heads was the focus of growth. For example, Neurosurgery, under the leadership of Dr Chandy, came to occupy the largest number of beds. The special funds provided an added impetus for technological sophistication.

SPECIAL FUND

The essential characteristics of the special fund started in 1962 were the following:

i) Each clinical unit will be entitled to a percentage of the physician's fees over and above Rs 100 charged to and recovered from the patients in that unit. This will be credited to a department "special fund".

ii) The department retained the right to use the funds for furthering the technological developments in the clinic as it deemed fit. The special fund was really a fund for discretionary spending at the disposal of the unit. Exhibit 14 gives the magnitude of special funds available with the major clinics.

iii) The designated aid from charitable organisations outside India and from within the country and those from grateful patients provided an added resource base for growth for the clinical units. The ability to attract funds from these sources depended largely on the "contacts" the doctors had developed.

iv) Diagnostic units (like X-ray, pathology, blood bank, and biochemistry) as they did not come in contact with the patients or collect "fees", were not entitled to a share in the special fund. As such the only source of funds for growth in the laboratories were gifts from abroad. Observed a senior professor, "The labs grow whenever it has a foreigner as the unit head. He has contacts and gets gifts. Otherwise it does not grow. This is a very sad situation." The service support was not growing in tandem with the growth of clinical units and their sophistication.

The opportunity for growth to clinical units was a mixed blessing. A veteran at CMCH said, "Individual departments have been encouraged to develop to the fullest extent without any regard for development of other departments or the institution as a whole. The encouragement has undoubtedly contributed a great deal to the development of many departments. Nevertheless, it is also partly responsible for the problems with which we are faced today."

Exhibit 14 shows the amounts outstanding against the major clinical units and three major service units — clinical biochemistry, microbiology and pathology.

FINANCIAL FORECAST

The Treasurer prepared a "maintenance budget" every year for approval by the Council of Management. The hospital did not operate a capital budget as almost all capital equipment were gifts from organizations or patients or bought with the aid of the special fund.

The finances of the hospital has been causing concern to the management of CMCH. In 1971, the deficit was 8.6% — nearly Rs 1.26 million. The donations had stabilised and there were reasons to believe that they may go down marginally. The hospital had to

a) project their needs for the next five years, and
b) develop a plan for meeting the deficit, if any.

The SQCU had collected a large amount of data regarding the various aspects of the working of CMCH. Some of the salient features of the studies conducted by SQCU are given below:

Wages and Salaries: Traditionally CMCH paid salaries which were lower than the "going rate" as the governing principle was the "spirit of service". During 1969, the ward boys and peons formed a union and went on a strike to demand wages comparable to those paid by the government hospitals around. The management had to yield. Commented a doctor, "This was an unprecedented step. None of us were emotionally prepared at that time to accept the idea of a strike. But it did take place. Every time the government revises its scales, which it does before every election, we may have no option but to increase our wages." The study by SQCU showed (based on data for the period 1966-67 to 1970-71) that the "natural trend" due to increments to staff called for a provision of 3.3% increase in wages and salaries (consolidated for all categories) per year.

Drugs: Due to an increase in the use of sophisticated drugs, mostly due to the sophisticated technologies used, a 10% increase was considered adequate coverage.

Depreciation: An estimated 5% increase was expected basically due to the installation of a power laundry and the Central Sterile Supply Depot (CSSD).

Maintenance & Power: Initial projections showed that the increase in costs due to additional spares, maintenance crews and power will be around 10%.

Income: Income from patient sources had increased by 31% for the period 1968-69 to 1970-71. Several doctors were against tapping this source for additional income. It was felt that CMCH was already considered "very expensive". But pressed with the need for additional funds, the doctor group at CMCH made several suggestions. Some of them were:

i) creating more private beds to generate income,
ii) charging OPs for repeat visits,
iii) increasing the charges to patients by a blanket 5-10%,
iv) expanding the "paying clinics", and
v) reducing the discretionary privileges of doctors in slashing bills — charity.

All these suggestions provoked strong emotional reactions amongst the senior staff — resentment as well as commitment. Most often, suggestions were turned down as they did not correspond to the concept of service at CMCH. Concerns like the following were common. "We should deal with the matter of getting more income from the out-patients and improving out-patient facilities; both must go together. We also need to be very careful in levying out-patients' fees. It should be done in such a manner that we do not get rid of our teaching material." (Out-patient provided undergraduate medical education, substantial portion of the teaching material.)

There were several voices raised against higher specialities. The doctors felt that "for post-graduate training higher specialities are very useful. However, for undergraduate training it may not be beneficial. It may also give a false concept of ideal medical practice in their minds. This may be partly because of poor demonstration of practical rural medical practice, the practical common peoples' medical practice. With greater press on these points we may be able to continue without significant change in the hospital speciality-non-speciality structure. Therefore, the most important change needed is in developing meaningful commonman's medical practice, to which the undergraduate student may be exposed more effectively, especially from the viewpoint of training medical men for peripheral mission centres."

At the same time, the doctors demanded the development of higher specialities like Haematology, microneurosurgery, radiation therapy using a 45 m.e.v. betatron, renal transplants, etc. There was a general consensus that higher specialities are more paying and that there exists substantial scope for increasing income.

COST REDUCTION

Cost reduction was actively promoted as a step the hospital should undertake on war-footing. The urgency of this measure is reflected in the comment of a doctor: "The matter of cutting costs has also almost entirely been relegated to the distant future. Unless we seriously tackle this right now we are definitely going to get into trouble." Some of the areas which were being explored were:

a) **The total length of stay of the patient at the hospital.** Exhibit 15 shows the average stay of a patient in the various clinical units and the length of pre-operative stay. It does not cover the waiting time of the patients due to non-availability of beds. The pre-operative waiting time, according to a senior surgeon "really consists of two elements, a necessary period for emotional adjustment of the patient and an avoidable element due to delays in getting diagnostic test results. Our biggest problem is the X-ray department. Would you believe that for a barium meal the waiting time is 15 days?"

"In addition, patients wait to get admitted. Obviously, a patient who has come from Delhi will wait in a hotel here and spend all his money waiting for admission. He has nothing left to pay the hospital later on and we are forced to give 'charity' at the time of his discharge."

b) CMCH has an excellent "automatic kitchen", under the direction of highly qualified dieticians. Observed the chief dietician, "We have the best facilities in the country. We serve three kinds of food — English (or Western), Indian and Modified/Optional food in special cases. Mostly private ward patients take English style food." Only about 100 private patients, 100 general ward patients and 65 free patients took food from

the kitchen. Most of them used the hotel facilities in Vellore town. Several hotels in Vellore were allowed entry into the hospital to serve food.

It was common practice amongst hospitals, even government hospitals, to insist that all patients take food from the hospital kitchen. The prices charged per day by CMCH for food and the variable costs are given below:

Prices and Variable Costs of Food — Table 1

Food style	Price charged in Rs.		Variable Cost Rs.
	Private Patients	General Ward Patients	
English	10.50	—	6.00
Indian	7.50	4.00	3.50
Modified/Optional	—	5.50	4.00

Fixed costs of running the kitchen were estimated to be Rs 20,000. It was also found that among the private patients (30% of the total), 20% prefer English style and 80% Indian style. Among general ward patients (70% of the total), which included 14% free patients, the preference was for Indian food (70%) and modified (30%).

c) A third area for cost reduction which was being considered was rationalisation of staffing pattern. It was suggested that staffing, especially the medical and nursing help, should be based on the "Extent of Care" that the patient needs rather than on a clinical unit basis, or on the basis of a blanket formula. The Nursing Council of India had laid down a standard for nurse-patient ratio in teaching hospitals as 1:4. This ratio was not adhered to by most hospitals; 1:6 was common. The Nursing Council did not envisage differential nurse-patient ratio based on patient needs and the care called for.

PLANS FOR GROWTH

Clinical units were planning improvements it the level of technology applied. Radiation therapy had received a gift of a 45 m.e.v. betatron for deep therapy, the only one of its kind in Asia as gift from the Danish International Development Auhority. Rs 6,00,000 was needed to construct a building to house it and shield the environment from radiation hazards. The gift did not include the cost of building or the recurring costs of manitenance. Typically, gifts of equipment were accepted by the clinical units. They did not make an exhaustive evaluation of the recurring costs to the hospital or the income generating potential of the new facility. This is but one example.

Research groups, the pride of CMCH were also concerned with their future as USAID and other external funds, it was rumoured, were likely to be restricted. Reflecting on these aspects and more specifically on the financial needs of the hospital, Dr. Koshi the Director said, "We have come to a stage in our growth where we need some soul-searching. Our traditional approach to growth may not be effective in the future. We need to raise more funds, become self-sufficient. Sometimes I wonder whether unfettered growth is the best strategy — is there an optimum size for a hospital? Whether we should deliberately slow down some clinical units and pace up some plan for our technology? We have abundant faith, a dedicated staff, a certain organizational vitality. We should be able to find our answers. The first item on my agenda is the financial forecast. I also need to develop a strategy for CMCH which will ensure its unique position of excellence in the health map of our country."

Questions

1 Identify and analyse the problems/issues involved in the CMCH case.

2 Analyse and comment upon the Financial and Management Control System (including the special fund instituted in 1962) prevalent in CMCH.

3 What recommendations would you like to offer for solving various problems/issues identified by you?

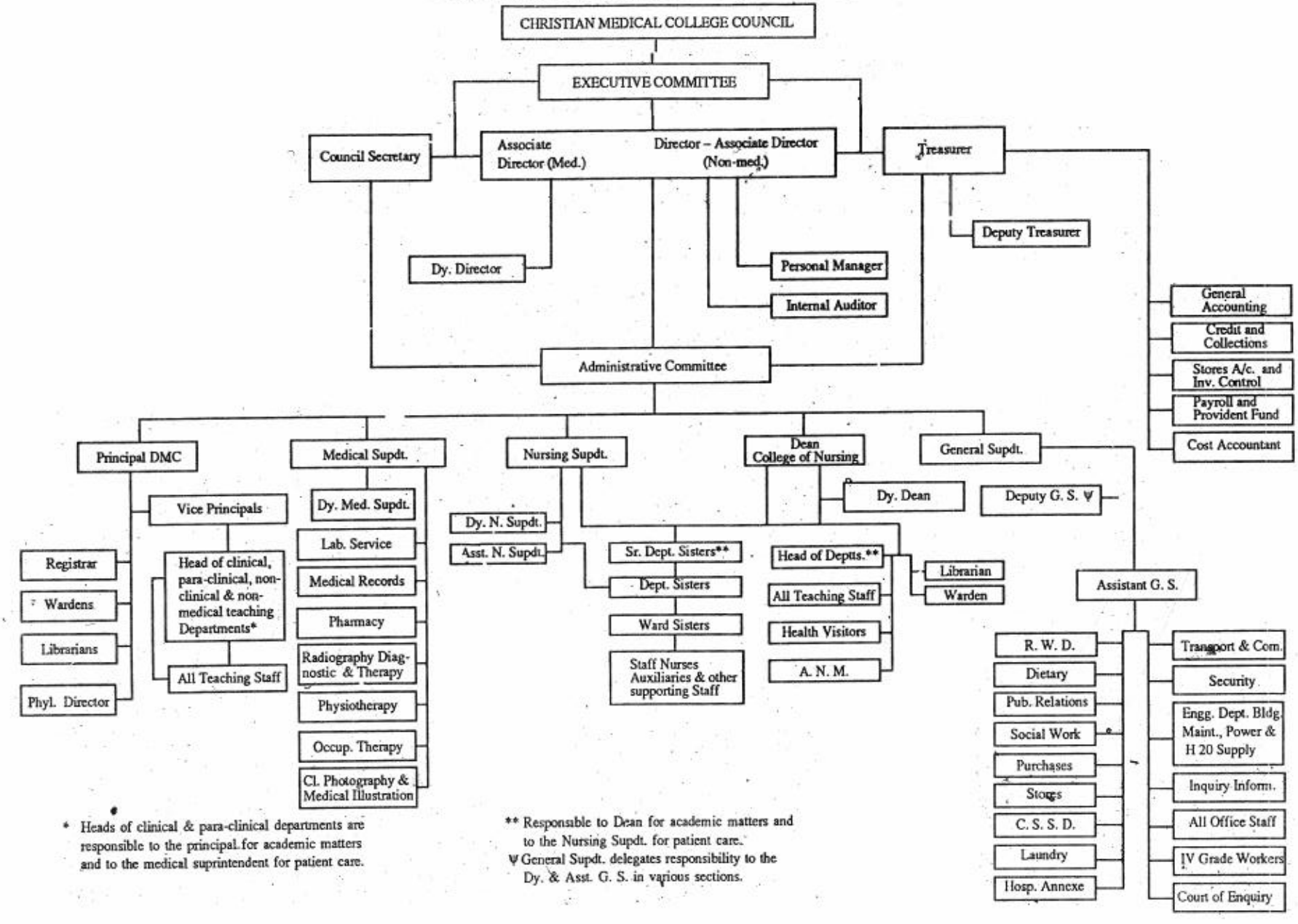
4 What strategy of growth would you like to recommend for CMCH, giving reasons/justifications for your recommendations?

EXHIBIT 1

Size of Operations — CMCH, Vellore

Patient Care		
Total Beds	:	1123
Major Operations/year	:	9227
Minor Operations/year	:	19616
Total Out-patient Visits/year	:	441000
Procedures in Diagnostic & Service Departments/year	:	808000
Prescriptions for Drug Items	:	1142155
Major Heart Operations and Cardiac Cathetrisations	:	863
Research		
Current Programmes	:	37
Education		
Post-Graduate Degree Courses	:	18 specialities
Post-Graduate Diploma Courses	:	8 specialities
Ph. D. Programme	:	8 specialities
Non-Medical Post-Graduate Degrees	:	5 courses
Nursing (including Post-Graduate)	:	9 courses
Paramedical Courses	:	11 courses

Organization Chart of Christian Medical College and Hospital, Vellore



* Heads of clinical & para-clinical departments are responsible to the principal for academic matters and to the medical suprintendent for patient care.

** Responsible to Dean for academic matters and to the Nursing Supdt. for patient care.

Ψ General Supdt. delegates responsibility to the Dy. & Asst. G. S. in various sections.

EXHIBIT 3

Christian Medical College & Hospital, Vellore
Sources and Uses of Funds in Rs. '000

SOURCES

ITEM	YEAR			
	1967-68	1968-69	1969-70	1970-71
Income from mian hospital	7,163	8,215	9,422	10,830
Income from other hospitals	557	574	633	710
From students:				
— MBBS	232	234	243	251
— Other	107	106	118	120
General	50	56	69	102
Council members contribution	1,781	1,654	1,658	1,423
Donations	79	75	95	53
Grants	311	500	298	393
Deficit (adjusted against plant and capital)	—	1,028	1,128	1,294
Total	10,280	12,442	13,664	15,176

USES

ITEM	YEAR			
	1967-68	1968-69	1969-70	1970-71
Medical College (Clinical) and Hospital				
Administration & Maintenance	13.41	15.88	16.74	20.63
Nursing	11.17	12.76	15.21	16.80
Clinical units	18.57	20.73	23.02	25.27
Service units	34.25	40.61	44.97	50.43
Medical College (Non-clinica')				
Administration & Maintenance	2.22	2.81	3.05	3.07
Pre-clinical	2.95	4.49	4.91	4.83
Division of communities health	.88	.84	.76	.93
Laboratory	.98	1.18	1.34	1.39
College of Nursing	4.02	4.48	5.18	5.62
General Administration				
Salaries & Maintenance	6.05	6.85	7.31	7.77
Others	2.57	2.59	1.81	1.74
Maintenance & Repairs	3.20	.90	.90	.90
Depreciation	3.00	8.80	9.11	9.87
Miscellaneous	1.55	1.54	1.44	1.30
Total	105.82	124.46	135.75	150.55

EXHIBIT 4

Christian Medical College & Hospital, Vellore
Expenditure in Rs. '000 — 1970-71

Item	Expenditure Rs.	Per cent of total
Salaries	7424	48.98
Supplies	3256	21.49
Depreciation	987	6.49
Maintenance & Repairs	528	3.50
Light & Power	534	3.50
Expenses	1401	9.24
Misc. (others)	425	
Maintenance — Property	199	
Telephone	63	
Taxes	29	
Linen	82	
Gas	153	
Medical Records	42	
Hospital Annexe	31	
Chatrem	2	6.80
Total	15156	100.00

EXHIBIT 5

Statement of Current Research Projects — 1971-72

Sl. No.	Title of the Project	Sponsoring Authority	Amount authorised	Duration of the project	Remarks
1	Longitudinal Studies in Human Reproduction	U.S. Dept. of Health, Education and Welfare, Public Health Service—National Center for Health Statistics, Washington	11,43,375	1969-74	
2	Collaborative Neurologic Studies Denver—Vellore	U.S. Dept. of Health, Education and Welfare, N.I.H, U.S.A.	3,90,000	1969-72	
3	Nutrition Research	U.S. Dept. of Health Education and Welfare—National Institute of Health, Bethesda, Maryland, U.S.A.	12,54,545	1970-73	
4	Paraplegic Rehabilitation	U.S. Dept. of Health, Education and Welfare—Social & Rehabilitation Service, Washington	9,44,150	1968-73	
5	Investigation of Stroke Patients and Application of improved methods of Rehabilitation	U.S. Dept. of Health, Education and Welfare—Social & Rehabilitation Service, Washington	11,87,000	1967-72	
6	Vocational Rehabilitation Project	U.S. Dept. of Health, Education and Welfare—Social & Rehabilitation Service, Washington	15,77,000	1968-73	
7	Welcome Research	The Welcome Trust, London	2,67,000	1970-72	
8	Welcome Research	U.S. Dept. of Health, Education and Welfare—National Institute of Health	Amount yet not sanctioned		
9	Studies in Trauma-Effects of adrenoceritical hormones and carragening on the biosynthesis of mycopolyeccharides (glycosaminoglycans)	ICMR	13,920	1971-72	
10	Peripheral Centre of the Indian Registry of Pathology	ICMR	10,000	1971-72	Actual bills reimbursed
11	Studies on Beta Hamolytic Streptococci and Streptococcal Diseases in South India	ICMR	18,570	1971-72	
12	V.D.R.L. Screening	ICMR	7,440	1971-72	
13	Role of gangliosides and other glycolipids in abnormal neuronal discharge	ICMR	7,600	1971-72	
14	A Clinical and Laboratory study of genitouri-nary Tuberculosis	ICMR	22,300	1971-72	
15	Red Cell Haemolysis in patients following Hetergraft and bali valve replacement	ICMR	8,500	1971-72	
16	A Social and Psychiatric study of a representative group of families in and around Vellore, North Arcot District	ICMR	10,418	1971-72	
17	Mechanism in Hypoxic Pumonary Oedema	ICMR	7,485	1971-72	
18	Mechanism of Growth of Nail	ICMR	5,440	1971-72	
19	Transmission of Leprosy to experimental animals	ICMR	9,195	1971-72	
20	Studies on Pseudo Cholinesterases in Leprosy	ICMR	6,970	1971-72	
21	Ultrastructure of choroid plexus of children with hydrocephalus and of monkeys with experimentally induced hydrocephalus	ICMR	9,600	1971-72	
22	Glycoproteins and neutral and acidic glycolipids in CDF in various neurological disorders	ICMR	6,785	1971-72	
23	Pattern of health expenditure among urban and rural communities	ICMR	19,697	1971-72	
24	The Role of Thyroid in Developing Rat Brain — Biochemical and Electrophysiological Studies	Government of India	9,042.00	1971-72	Actual bills reimbursed
25	Studies on the Metabolism of amino acids and carbohydrates with special references to intestinal functions	CSIR	23,800.00	1971-72	
26	Schemes on Biosynthesis and Physiological Function of acidic glycolipids and Nucopoly-saccharides	CSIR	22,859.06	1971-72	
27	Training in Leprosy and Physiotheraphy	Hindu Kusht Nivaran Sangh, New Delhi	15,324.66		Actual bills reimbursed

ICMR = Indian Council of Medical Research
CSIR = Council of Scientific & Industrial Research

EXHIBIT 6

Medical Breakthrough in India — Contribution of CMCH, Vellore*

1 Heart Diseases

First in India to carry out open-heart surgery. Rheumatic heart diseases occur all over the world resulting in narrowing of the mitral valve. It is possible to overcome the ill effects by operative procedures to enlarge the valve opening. It was found that high proportion of Indians develop a marked narrowing of this valve at an early age and that contrary to general teaching, such operations are successful. In some parts of the world this is done with artificial valves but at Vellore, transplanted valve have produced good results as well as proved to be cheaper to the patients.

2 Neurological Diseases

Outstanding has been the work of neurobiochemistry which has concentrated on studying some of the biochemical reactions occurring in the brain, particularly in relation to substances known as mucopolysaccharides, gangliosides and cerebrosulphatides. One of these enzymes has been shown to be absent in hereditary mental diseases called "metachrantic leucodystrophy". This is a breakthrough. The leader of the team received the Bhatnagar Award in 1962 for biochemical sciences.

A localised form of tuberculous infection of the brain, called tuberculoma is common in India and it closely resembles cancer of the brain. For the first time an investigational tool, using radio isotopes, which distinguishes the two, has been developed.

3 Orology

Has performed several successful renal transplants working in close liaison with the nephrology unit. Nephrology unit has been carrying out renal dialyses (using artificial kidney) for well over ten years.

4 Microsurgery

Vellore was the first to develop microsurgery of the ear for deafness. 341 stapedectomies were performed in 1970. This cural surgery is supported by the resources of a well-equipped Audiology section.

5 Leprosy

This is one of the biggest health problems in India. Pioneering work was done in the development of the tendon transplant to correct the claw-hand deformity. Fundamental studies in this area like animal transmission experiments, immunological and metabolic changes in leprosy patients and electron microscopic studies of the bacilli and the ultra structural changes they produce in affected host tissues and especially the way the bacilli produce nerve damage, are in progress.

6 Infectious Diseases

Tropical eosinophilia is a common disease and it used to be treated with injections of arsenic, which proved to be fatal at times. The actiology of the disease was unknown. Studies at Vellore have established, for the first time, an understanding of the actiology of the disease as well as a standard form of therapy. The enterovirus laboratory has made significant contributions to the understanding of the pattern of viral infection in a normal urban population and has defined the types of viruses that may occur. It has also shown that enteroviruses isolated were not the significant causes of gastroenteritis.

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* Taken from a note prepared by CMCH, Vellore. The above mentioned areas are but a small sample of the significant research/clinical breakthroughs and is intended to provide "a feel" for the nature of work done at CMCH.

EXHIBIT 7

CMCH, Vellore
Workload

	IN-PATIENT DAYS			OUT-PATIENT VISIT			
Year	IP Admission	Hosp. days	Avg. IP pay per admission	New	Repeat	Average Rpt. New	Total
1	2	3	4	5	6	7	8
1964-65	17368	2,55,350	14.7	70279	250169	3.6	320448
1965-66	19098	2,45,902	12.9	75256	294848	3.9	370104
1966-67	19945	2,72,890	13.7	74808	339643	4.5	414451
1967-68	21671	2,83,059	13.8	73265	360295	4.9	433560
1968-69	22237	3,07,053	13.8	75471	387706	5.2	463177
1969-70	21638	2,98,876	13.8	66654	384068	5.8	450722
1970-71	22211	3,00,546	13.5	76352	364935	4.8	441287

EXHIBIT 8

Comparison of Growth Rate & Workload of Clinical Units — 1970-71

		OP		IP	
		Workload	Growth Rate	Workload	Growth Rate
		(Total Visits)	(Hosp. Days)		
1	Medicine	18.0%	0.4%	13.0%	0.4%
2	Child Health	10.6%	1.3%		
3	E.N.T.	7.4%	2.6%		
4	S.S.H.S.	7.0%	13.0%		
5	Ortho			4.3%	0.9%
6	R.T.	5.5%	12.3%		
7	Urology			4.4%	6.0%
8	Surgery	6.2%	2.3%	11.0%	0.2%
9	Casualty	5.5%	3.7%		
10	Dermatology	5.7%	5.6%		
11	O. & G.			13.7%	0.4%
12	Neurology			10.0%	5.0%
13	Cardiology			9.3%	7.8%
14	Neonatal			6.2%	3.2%
	Total	65.9%	4.0%	71.9%	2.6%

EXHIBIT 9

Staff at CMCH as of 1971

Doctors	385
Nurses	436
Paramedical	223
Non-medical	211
Gen. Adm.	436
Eng. & Mtce.	143
Chaplains & Evangelists	11
Peons, Cleaners & Grade IV	882
Total	2727

EXHIBIT 10

Data on In-Patients and Out-Patients Sept.-Nov. 1970 (3 Months)

Unit		Private %	Gen. Full Pay	Part Free %	Free %
A)	**In-Patients**				
1	Med. I	38	33	25	4
2	Med. II	35	40	20	5
3	Med. III	45	26	26	3
4	Cardiology	50	27	20	3
5	Dermatology	20	64	10	6
6	Paediatrics I	5	79	12	4
7	Paediatrics II	—	89	9	2
8	R. T.	37	37	20	6
9	Urology	39	34	23	4
10	Surgery I	18	48	30	4
11	Surgery II	30	40	23	7
12	Surgery III	34	23	40	3
13	Plast. Surgery	30	37	20	13
14	Orthopaedics I	29	22	43	6
15	Orthopaedics II	15	50	30	5
16	Neurology	28	43	25	4
17	Thoracic	—	43	48	9
18	ENT	7	73	13	7
19	Dental	—	50	12	38
20	Obst. & Gynaecology I	4	47	47	2
21	Obst. & Gynaecology II	7	53	37	3
22	Obst. & Gynaecology III	5	47	43	5
23	Hand Research	—	—	20	80
24	SSHR	17	—	—	83
B)	Out-Patients	15	65	—	20

EXHIBIT 11

Income Generated by Clinical Units
Contribution Statement (Rs. '000)

		Income		Expenditure		Gross Cont.		Charity		Net Cont.	
		IP	OP	IP	OP	IP	OP	IP	OP	IP	OP
1	Cardiology	409	256	636	238	173	18	185	22	12	(4)
2	Casualty	—	4	—	83	—	(79)	—	18	—	(97)
3	Dental	24	34	37	53	(13)	(19)	7	8	(20)	(27)
4	Dermatology	44	112	62	137	(18)	(25)	6	11	(24)	(26)
5	E.N.T.	232	151	143	159	89	(8)	35	22	54	(30)
6	Medicine I	394	359	275	340	124	14	75	59	49	(45)
7	Medicine II	284	322	266	327	40	(5)	46	70	(6)	(75)
8	Medicine III	569	372	396	370	173	2	85	63	88	(61)
9	Neurology	784	209	644	160	140	49	165	13	(25)	(36)
10	Obst. & Gynae. I	253	62	209	69	44	(7)	72	9	(28)	(16)
11	Obst. & Gynae. II	273	64	214	65	59	(1)	68	12	(9)	(13)
12	Obst. & Gynae. III	181	32	162	40	19	(8)	50	7	(31)	(15)
13	Orthopaedics	295	137	255	203	40	(66)	107	62	(67)	(128)
14	Paediatrics	336	171	258	263	78	(92)	96	80	(18)	(172)
15	Radio Therapy	357	309	300	234	57	75	62	25	(5)	(50)
16	S.S.N.S.	137	155	128	247	9	(92)	133	154	(124)	(246)
17	Surgery I	292	70	246	75	46	(5)	83	15	(37)	(20)
18	Surgery II	418	83	317	97	101	(14)	105	30	(4)	(44)
19	Surgery III	292	63	259	79	33	(11)	105	33	(72)	(44)
20	Plastic Surgery	94	12	76	16	18	(4)	17	1	1	(5)
21	Urology	338	116	257	131	81	(15)	63	22	13	(37)
22	Thoracic	505	106	266	113	237	(7)	165	9	72	(16)
23	Welcome	29	—	45	10	(16)	(10)	—	—	(16)	(10)
24	Physical Medicine	61	10	70	10	(11)	—	13	4	(3)	(15)
25	Others	91	5	83	50	8	1	—	—	50	1
		7092	3260	5604	3569	1511	(309)	1743	749	(150)	(1231)
		10,352		9,173		1202		2492		(1381)	

Figure ( ) denote deficit

EXHIBIT 12

Income Pattern at CMCH

	IP			OP			OP Income
	(A) Charge	(B) Charity	% B/A	(A) Charge	(B) Charity	% B/A	% Total Income
1961-62	1705	502	29.4	1331	164	12	49
1962-63	3803	572	13.3	1497	218	17.3	28.4
1963-64	4199	685	16.4	1664	285	17.3	28.2
1964-65	4318	606	13.6	1740	275	15.8	28.4
1965-66	4554	666	14.7	2042	369	18	30
1966-67	5507	1106	20.2	2675	434	16	34
1967-68	6313	1318	20.9	3268	668	20	34.2
1968-69	6992	1746	24.9	3260	749	22.7	32.2

EXHIBIT 13

Patient Profile—Region of Origin (1971)

Clinical Group	Region of Origin in Percentage									
	Vellore Town & Taluka		N. Arcot District		Other districts in Tamil Nadu		Other States and from Abroad		Total	
	IP	OP	IP	OP	IP	OP	IP	OP	IP	OP
General	41.0	29.0	28.0	36.0	11.0	19.0	20.0	16.0	100	100
Obstetrics Gynaecology										
Paediatrics										
Specialities	14.0	18.0	22.3	28.3	31.5	26.8	32.2	26.9	100	100
General Medicine										
General Surgery										
Orthopaedics										
Dermatology										
Radiation Therapy										
ENT, Opthalmology										
Dental										
Higher specialities	5.0	5.0	10.3	12.0	26.0	25.3	58.7	57.7	100	100
Neurology										
Cardiology										
Thoracic										
Nephrology										
Urology										
Plastic Surgery										

Note: 1) Analysis based on a random sample of 300 IPs and 300 OPs in each of the three clinical groups.
2) N. Arcot District is the district in which Vellore is located and Tamil Nadu the home-state.

EXHIBIT 14
Income and return at CMCH
Special Fund Account as of 30.8.1971

Clinic	Special Funds (Rs)
Kidney Lab.	283,090
Nephrology	141,362
Mobile outreach service programme	115,932
Thoracic	115,789
Mobile Leprosy	113,113
Neurology	96,970
Biostatistics	94,251
Radiotherapy	84,502
Electrocardiography	71,609
Medicine III	63,394
Eye camp	57,095
Medicine II	51,176
Audio visual Unit	44,516
Medicine I	44,140
Total	1376,939

Note: Total number of special fund accounts as of 30.6.1971 were 86.

Total amount in special funds as of 30.6.1971 was Rs 1,974,434.10.

The balance against some laboratories are given below:

Clinical biochemistry	Rs 7966
Microbiology	Rs 2229
Pathology	Rs 6693

EXHIBIT 15

Christian Medical College & Hospital, Vellore
Average Length of Pre-operative Stay

Department	Average Length of Stay
Plastic Surgery	2.5
Surgery I	4.7
Surgery II	6.4
Surgery III	4.5
Urology	6.5
Ortho I	3.7
Ortho II	3.7
Neurology	9.2
Cardiac	13.7
Thoracic	13.8
Overall	6.9